



NASA SP-7039(09)

Section 2

Indexes

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# PATENT ABSTRACTS BIBLIOGRAPHY

A CONTINUING BIBLIOGRAPHY

Section 2 • Indexes

JULY 1976

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

## ACCESSION NUMBER RANGES

<i>Bibliography Number</i>	<i>STAR Accession Numbers</i>
NASA SP-7039(04)	N69-20701—N73-33931
NASA SP-7039(05)	N74-10001—N74-21629
NASA SP-7039(06)	N74-21630—N74-35363
NASA SP-7039(07)	N75-10001—N75-21218
NASA SP-7039(08)	N75-21219—N75-34001
NASA SP-7039(09)	N76-10001—N76-22149

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PATENT  
ABSTRACTS  
BIBLIOGRAPHY

A CONTINUING BIBLIOGRAPHY

Section 2 • Indexes

Indexes for the annotated references to NASA-owned inventions covered by U.S. patents and applications for patent that were announced in *Scientific and Technical Aerospace Reports (STAR)* between May 1969 and June 1976. This issue supersedes all previous Index Sections.



Scientific and Technical Information Office  
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

JULY 1976

Washington, D.C.

This Supplement is available from the National Technical Information Service (NTIS), Springfield, Virginia 22161, for \$5.00. For copies mailed to addresses outside the United States, add \$2.50 per copy for handling and postage.



# INTRODUCTION

Several thousand inventions result each year from the aeronautical and space research supported by the National Aeronautics and Space Administration. The inventions having important use in government programs or significant commercial potential are usually patented by NASA. These inventions cover practically all fields of technology and include many that have useful and valuable commercial application.

NASA inventions best serve the interests of the United States when their benefits are available to the public. In many instances, the granting of nonexclusive or exclusive licenses for the practice of these inventions may assist in the accomplishment of this objective. This bibliography is published as a service to companies, firms, and individuals seeking new, licensable products for the commercial market.

The *NASA Patent Abstracts Bibliography (NASA PAB)* is a semiannual NASA publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. The citations included in *NASA PAB* were originally published in NASA's *Scientific and Technical Aerospace Reports (STAR)* and cover *STAR* announcements made since May 1969.

For the convenience of the user, each issue of *NASA PAB* has a separately bound Abstract Section (Section 1) and Index Section (Section 2). Although each Abstract Section covers only the indicated six-month period, the Index Section is cumulative covering all NASA-owned inventions announced in *STAR* since May 1969. Thus a complete set of *NASA PAB* would consist of the Abstract Section of Issue 04 (January 1974), the Abstract Section for all subsequent issues, and the Index Section for the most recent issue.

The 200 citations published in this issue of the Abstract Section cover the period January 1976 through June 1976. The Index Section contains references to the 2994 citations covering the period May 1969 through June 1976.

## ABSTRACT SECTION (SECTION 1)

This *PAB* issue incorporates the 1975 *STAR* category revisions which include 10 major subdivisions divided into 74 specific categories and one general category/division. (See Table of Contents for the scope note of each category under which are grouped appropriate NASA inventions.) This new scheme was devised in lieu of the 34 category divisions which were utilized in *PAB* supplements (01) through (06) covering *STAR* abstracts from May 1969 through January 1974. Each entry in the Abstract Section consists of a *STAR* citation accompanied by an abstract and a key illustration taken from the patent or application for patent drawing. Entries are arranged in subject category in order of the ascending NASA Accession Number originally assigned in *STAR* to the invention. The range of NASA Accession Numbers within each issue is printed on the inside front cover.

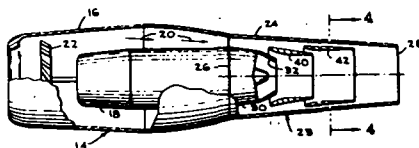
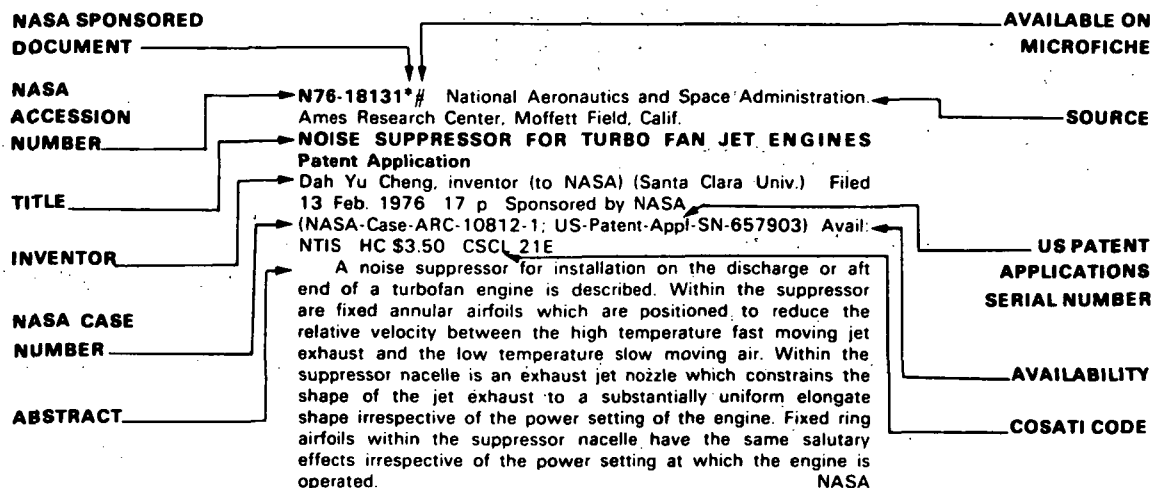
*Abstract Citation Data Elements:* Each of the abstract citations has several data elements useful for identification and indexing purposes, as follows:

- NASA Accession Number
- NASA Case Number
- Inventor's Name

Title of Invention  
 U.S. Patent Application Serial Number  
 U.S. Patent Number (for issued patents only)  
 U.S. Patent Office Classification Number(s)  
 (for issued patents only)

These data elements in the citation of the abstract as depicted in the Typical Citation and Abstract reproduced below and are also used in the several indexes.

## TYPICAL CITATION AND ABSTRACT



KEY ILLUSTRATION



## INDEX SECTION(SECTION 2)

The Index Section is divided into five indexes which are cross-indexed and are useful in locating a single invention or groups of inventions.

Each of the five indexes utilizes basic data elements: (1) Subject Category Number, (2) NASA Accession Number, and (3) NASA Case Number, in addition to other specific index terms.

**Subject Index:** Lists all inventions according to appropriate alphabetized technical term and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Inventor Index:** Lists all inventions according to alphabetized names of inventors and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Source Index:** Lists all inventions according to alphabetized source of invention (i.e., name of contractor or government installation where invention was made) and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Number Index:** Lists inventions in order of ascending (1) NASA Case Number, (2) U.S. Patent Application Serial Number, (3) U.S. Patent Classification Number, and (4) U.S. Patent Number and indicates the related Subject Category Number and the NASA Accession Number.

**Accession Number Index:** Lists all inventions in order of ascending NASA Accession Number and indicates the related Subject Category Number, the NASA Case Number, the U.S. Patent Application Serial Number, the U.S. Patent Classification Number, and the U.S. Patent Number.

## HOW TO USE THIS PUBLICATION TO IDENTIFY NASA INVENTIONS

To identify one or more NASA inventions within a specific technical field or subject, several techniques are possible when using the flexibility incorporated into the *NASA PAB*.

(1) *Using Subject Category:* To identify all NASA inventions in any one of the subject categories in this issue of *NASA PAB*, select the desired Subject Category in the Abstract Section (Section 1) and find the inventions abstracted thereunder. For previous *NASA PAB* issues, the Tables of Contents to Section 2 should be examined as the Subject categories were changed beginning with *NASA PAB (07)*.

(2) *Using Subject Index:* To identify all NASA inventions listed under a desired technical subject index term, (A) turn to the cumulative Subject Index in the Index Section and find the invention(s) listed under the desired technical subject term. (B) Note the indicated Accession Number and the Subject Category Number. (C) Using the indicated Accession Number, turn to the inside front cover of the Index Section to determine which issue of the Abstract Section includes the Accession Number desired. (D) To find the abstract of the particular invention in the issue of the Abstract Section selected, (i) use the Subject Category Number to locate the Subject Category and (ii) use the Accession Number to locate the desired invention within the Subject Category listing.

(3) *Using Patent Classification Index:* To identify all inventions covered by issued NASA patents (does not include applications for patent) within a desired Patent Office Classification, (A) turn to the Patent Classification Number in the Number Index of Section 2 and find the associated inventions(s), and (B) follow the instructions outlined in (2)(B), and (D) above.

## **PUBLIC AVAILABILITY OF COPIES OF PATENTS AND PATENT APPLICATIONS**

Copies of U.S. patents may be purchased directly from the U.S. Patent Office, Washington, D.C. 20231, for fifty cents a copy.

Copies of pending NASA applications for patent abstracted in *NASA PAB* are sold by the National Technical Information Service, Springfield, Virginia 22161, at the price shown in the citation. Microfiche are sold at the established unit price of \$2.25. When ordering copies of an application for patent from NTIS, the U.S. Patent Application Serial Number listed in the index or shown in the citation for each abstract should be used to identify the desired application for patent.

## **LICENSES FOR COMMERCIAL USE: INQUIRIES AND APPLICATIONS FOR LICENSE**

NASA inventions, abstracted in *NASA PAB*, are available for nonexclusive or exclusive licensing in accordance with the NASA Patent Licensing Regulations. It is significant that all licenses for NASA inventions shall be by express written instruments and that no license will be granted or implied in a NASA invention except as provided in the NASA Patent Licensing Regulations.

Inquiries concerning the NASA Patent Licensing Program or the availability of licenses for the commercial use of NASA-owned inventions covered by U.S. patents or pending applications for patent should be forwarded to the NASA Patent Counsel of the NASA installation having cognizance of the specific invention, or the Assistant General Counsel for Patent Matters, Code GP, National Aeronautics and Space Administration, Washington, D.C. 20546. Inquiries should refer to the NASA Case Number, the Title of the Invention, and the U.S. Patent Number or the U.S. Application Serial Number assigned to the invention as shown in *NASA PAB*.

The NASA Patent Counsel having cognizance of the invention is determined by the first three letters or prefix of the NASA Case Number assigned to the invention. The addresses of NASA Patent Counsels are listed alongside the NASA Case Number prefix letters in the following table. Formal application of license must be submitted on the NASA Form, Application for NASA Patent License, which is available upon request from any NASA Patent Counsel.



**NASA Case  
Number  
Prefix Letters**

**Address of Cognizant  
NASA Patent Counsel**

ARC-xxxxx  
XAC-xxxxx

Ames Research Center  
Mail Code: 200-11A  
Moffett Field, California 94035  
Telephone: (415)965-5104

ERC-xxxxx  
XER-xxxxx  
HQN-xxxxx  
XHQ-xxxxx

NASA Headquarters  
Mail Code: GP  
Washington, D.C. 20546  
Telephone: (202)755-3954

GSC-xxxxx  
XGS-xxxxx

Goddard Space Flight Center  
Mail Code: 204  
Greenbelt, Maryland 20771  
Telephone: (301)982-2351

KSC-xxxxx  
XKS-xxxxx

John F. Kennedy Space Center  
Mail Code: AA-PAT  
Kennedy Space Center, Florida 32899  
Telephone: (305)867-2544

LAR-xxxxx  
XLA-xxxxx

Langley Research Center  
Mail Code: 456  
Langley Station  
Hampton, Virginia 23365  
Telephone: (804)827-3725

LEW-xxxxx  
XLE-xxxxx

Lewis Research Center  
Mail Code: 500-311  
21000 Brookpark Road  
Cleveland, Ohio 44135  
Telephone: (216)433-6346

MSC-xxxxx  
XMS-xxxxx

Lyndon B. Johnson Space Center  
Mail Code: AM  
Houston, Texas 77058  
Telephone: (713)483-4871

MFS-xxxxx

George C. Marshall Space Flight  
Center

XMF-xxxxx

Mail Code: CC01  
Huntsville, Alabama 35812  
Telephone: (205)453-0020

NPO-xxxxx  
XNP-xxxxx  
FRC-xxxxx  
XFR-xxxxx  
WOO-xxxxx

NASA Resident Legal Office  
Mail Code: 180-601  
4800 Oak Grove Drive  
Pasadena, California 91103  
Telephone: (213)354-2700

# Title 14—AERONAUTICS AND SPACE

## Chapter V—National Aeronautics and Space Administration

### PART 1245—PATENTS

#### Subpart 2—Patent Licensing Regulations

1. Subpart 2 is revised in its entirety as follows:

Sec.	
1245.200	Scope of subpart.
1245.201	Definitions.
1245.202	Basic considerations.
1245.203	Licenses for practical application of inventions.
1245.204	Other licenses.
1245.205	Publication of NASA inventions available for license.
1245.206	Application for nonexclusive license.
1245.207	Application for exclusive license.
1245.208	Processing applications for license.
1245.209	Royalties and fees.
1245.210	Reports.
1245.211	Revocation of licenses.
1245.212	Appeals.
1245.213	Litigation.
1245.214	Address of communications.

**AUTHORITY:** The provisions of this Subpart 2 issued under 42 U.S.C. 2457, 2473(b)(3).

#### § 1245.200 Scope of subpart.

This Subpart 2 prescribes the terms, conditions, and procedures for licensing inventions covered by U.S. patents and patent applications for which the Administrator of the National Aeronautics and Space Administration holds title on behalf of the United States.

#### § 1245.201 Definitions.

For the purpose of this subpart, the following definitions apply:

(a) "Invention" means an invention covered by a U.S. patent or patent application for which the Administrator of NASA holds title on behalf of the United States and which is designated by the Administration as appropriate for the grant of license(s) in accordance with this subpart.

(b) "To practice an invention" means to make or have made, use or have used, sell or have sold, or otherwise dispose of according to law any machine, article of manufacture or composition of matter physically embodying the invention, or to use or have used the process or method comprising the invention.

(c) "Practical application" means the manufacture in the case of a composition of matter or product, the use in the case of a process, or the operation in the case of a machine, under such conditions as to establish that the invention is being utilized and that its benefits are reasonably accessible to the public.

(d) "Special invention" means any invention designated by the NASA Assistant General Counsel for Patent Matters to be subject to short-form licensing procedures. An invention may be designated as a special invention when a determination is made that:

(1) Practical application has occurred and is likely to continue for the life of

the patent and for which an exclusive license is not in force, or

(2) The public interest would be served by the expeditious granting of a nonexclusive license for practice of the invention by the public.

(e) The "Administrator" means the Administrator of the National Aeronautics and Space Administration, or his designee.

(f) "Government" means the Government of the United States of America.

(g) The "Inventions and Contributions Board" means the NASA Inventions and Contributions Board established by the Administrator of NASA within the Administration in accordance with section 305 of the National Aeronautics and Space Act of 1958 as amended (42 U.S.C. 2457).

#### § 1245.202 Basic considerations.

(a) Much of the new technology resulting from NASA sponsored research and development in aeronautical and space activities has application in other fields. NASA has special authority and responsibility under the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2451), to provide for the widest practical dissemination and utilization of this new technology. In addition, NASA has been given unique requirements to protect the inventions resulting from NASA activities and to promulgate licensing regulations to encourage commercial use of these inventions.

(b) NASA-owned inventions will best serve the interests of the United States when they are brought to practical application in the shortest time possible. Although NASA encourages the non-exclusive licensing of its inventions to promote competition and achieve their widest possible utilization, the commercial development of certain inventions calls for a substantial capital investment which private manufacturers may be unwilling to risk under a nonexclusive license. It is the policy of NASA to seek exclusive licenses when such licenses will provide the necessary incentive to the licensee to achieve early practical application of the invention.

(c) The Administrator, in determining whether to grant an exclusive license, will evaluate all relevant information submitted by applicants and all other persons and will consider the necessity for further technical and market development of the invention, the capabilities of prospective licensees, their proposed plans to undertake the required investment and development, the impact on competitors, and the benefits of the license to the Government and to the public. Preference for exclusive license shall be given to U.S. citizens or companies who intend to manufacture or use, in the case of a process, the invention in the United States of America, its territories and possessions. Consideration may also be given to assisting small businesses and minority business enterprises, as well as economically depressed, low income and labor surplus areas.

(d) All licenses for inventions shall

be by express written instruments. No license shall be granted either expressly or by implication, for a NASA invention except as provided for in §§ 1245.203 and 1245.204 and in any existing or future treaty or agreement between the United States and any foreign government.

(e) Licenses for inventions covered by NASA-owned foreign patents and patent applications shall be granted in accordance with the NASA Foreign Patent Licensing Regulations (§ 1245.4).

#### § 1245.203 Licenses for practical application of inventions.

(a) *General.* As an incentive to encourage practical application of inventions, licenses will be granted to responsible applicants according to the circumstances and conditions set forth in this section.

(b) *Nonexclusive licenses.* (1) Each invention will be made available to responsible applicants for nonexclusive, revocable licensing in accordance with § 1245.206, consistent with the provisions of any existing exclusive license.

(2) The duration of the license shall be for a period as specified in the license.

(3) The license shall require the licensee to achieve the practical application of the invention and to then practice the invention for the duration of the license.

(4) The license may be granted for all or less than all fields of use of the invention and throughout the United States of America, its territories and possessions, Puerto Rico, and the District of Columbia, or in any lesser geographic portion thereof.

(5) The license shall extend to the subsidiaries and affiliates of the licensee and shall be nonassignable without approval of the Administrator, NASA, except to the successor of that part of the licensee's business to which the invention pertains.

(c) *Short-form nonexclusive licenses.* A nonexclusive, revocable license for a special invention, as defined in § 1245.201 (d), shall be granted upon written request, to any applicant by the Patent Counsel of the NASA Installation having cognizance of the invention.

(d) *Exclusive licenses.* (1) A limited exclusive license may be granted on an invention available for such licensing provided that:

(i) The Administrator has determined that: (a) The invention has not been brought to practical application by a nonexclusive licensee in the fields of use or in the geographical locations covered by the application for the exclusive license, (b) practical application of the invention in the fields of use or geographical locations covered by the application for the exclusive license is not likely to be achieved expeditiously by the further funding of the invention by the Government or under a nonexclusive license requested by any applicant pursuant to these regulations, and (c) the exclusive license will provide the necessary incentive to the licensee to achieve the practical application of the invention; and

(ii) Either a notice pursuant to



# PATENT LICENSING REGULATIONS

§ 1245.205 listing the invention as available for licensing has been published in the FEDERAL REGISTER for at least 9 months; or a patent covering the invention has been issued for at least 6 months. However, a limited exclusive license may be granted prior to the periods specified above if the Administrator determines that the public interest will best be served by the earlier grant of an exclusive license.

(2) The license may be granted for all or less than all fields of use of the invention, and throughout the United States of America, its territories and possessions, Puerto Rico, and the District of Columbia, or in any lesser geographic portion thereof.

(3) The exclusive period of the license shall be negotiated, but shall be for less than the terminal portion of the patent, and shall be related to the period necessary to provide a reasonable incentive to invest the necessary risk capital.

(4) The license shall require the licensee to practice the invention within a period specified in the license and then to achieve practical application of the invention.

(5) The license shall require the licensee to expend a specified minimum sum of money and/or to take other specified actions, within indicated period(s) after the effective date of the license, in an effort to achieve practical application of the invention.

(6) The license shall be subject to at least an irrevocable royalty-free right of the Government of the United States to practice and have practiced the invention throughout the world by or on behalf of the Government of the United States and on behalf of any foreign government pursuant to any existing or future treaty or agreement with the United States.

(7) The license may reserve to the Administrator, NASA, under the following circumstances, the right to require the granting of a sublicense to responsible applicant(s) on terms that are considered reasonable by the Administrator, taking into consideration the current royalty rates under similar patents and other pertinent facts: (i) To the extent that the invention is required for public use by Government regulation, or (ii) as may be necessary to fulfill health or safety needs, or (iii) for other purposes stipulated in the license.

(8) The license shall be nontransferable except to the successor of that part of the licensee's business to which the invention pertains.

(9) Subject to the approval of the Administrator, the licensee may grant sublicenses under the license. Each sublicense granted by an exclusive licensee shall make reference to and shall provide that the sublicense is subject to the terms of the exclusive license including the rights retained by the Government under the exclusive license. A copy of each sublicense shall be furnished to the Administrator.

(10) The license may be subject to such other reservations as may be in the public interest.

## § 1245.204 Other licenses.

(a) *License to contractor.* There is

hereby granted to the contractor reporting an invention made in the performance of work under a contract of NASA in the manner specified in section 305(a) (1) or (2) of the National Aeronautics and Space Act of 1958 as amended (42 U.S.C. 2457(a) (1) or (2)), a revocable, nonexclusive, royalty-free license for the practice of such invention, together with the right to grant sublicenses of the same scope to the extent the contractor was legally obligated to do so at the time the contract was awarded. Such license and right is nontransferable except to the successor of that part of the contractor's business to which the invention pertains.

(b) *Miscellaneous licenses.* Subject to any outstanding licenses, nothing in this subpart 2 shall preclude the Administrator from granting other licenses for inventions, when he determines that do so would provide for an equitable distribution of rights. The following exemplify circumstances wherein such licenses may be granted:

(1) In consideration of the settlement of an interference;

(2) In consideration of a release of a claim of infringement; or

(3) In exchange for or as part of the consideration for a license under adversely held patent(s).

## § 1245.205 Publication of NASA inventions available for license.

(a) A notice will be periodically published in the FEDERAL REGISTER listing inventions available for licensing. Abstracts of the inventions will also be published in the NASA Scientific and Technical Aerospace Reports (STAR) and other NASA publications.

(b) Copies of pending patent applications for inventions abstracted in STAR may be purchased from the National Technical Information Service, Springfield, Va. 22151.

## § 1245.206 Application for nonexclusive license.

(a) *Submission of application.* An application for nonexclusive license under § 1245.203(b) or a short-form nonexclusive license for special inventions under § 1245.203(c) shall be addressed to the NASA Patent Counsel of the NASA installation having cognizance over the NASA invention for which a license is desired or to the NASA Assistant General Counsel for Patent Matters.

(b) *Contents of an application for nonexclusive license.* An application for nonexclusive license under § 1245.203(b) shall include:

(1) Identification of invention for which license is desired, including the NASA patent case number, patent application serial number of patent number, title and date, if known;

(2) Name and address of the person, company or organization applying for license and whether the applicant is a U.S. citizen or a U.S. corporation;

(3) Name and address of representative of applicant to whom correspondence should be sent;

(4) Nature and type of applicant's business;

(5) Number of employees;

(6) Purpose for which license is desired;

(7) A statement that contains the applicant's best knowledge of the extent to which the invention is being practiced by private industry and the Government;

(8) A description of applicant's capability and plan to undertake the development and marketing required to achieve the practical application of the invention, including the geographical location where the applicant plans to manufacture or use, in the case of a process, the invention; and

(9) A statement indicating the minimum term of years the applicant desires to be licensed.

(c) *Contents of an application for a short-form nonexclusive license.* An application for a short-form nonexclusive license under § 1245.203(c) for a special invention shall include:

(1) Identification of invention for which license is desired, including the NASA patent case number, patent application serial number or patent number, title and date, if known;

(2) Name and address of company or organization applying for license; and

(3) Name and address of representative of applicant to whom correspondence should be sent.

## § 1245.207 Application for exclusive license.

(a) *Submission of application.* An application for exclusive license under § 1245.203(d) may be submitted to NASA at any time. An application for exclusive license shall be addressed to the NASA Assistant General Counsel for Patent Matters.

(b) *Contents of an application for exclusive license.* In addition to the requirements set forth in § 1245.206(b), the application for an exclusive license shall include:

(1) Applicant's status, if any, in any one or more of the following categories:

(i) Small business firm;

(ii) Minority business enterprise;

(iii) Location in a surplus labor area;

(iv) Location in a low-income urban area; and

(v) Location in an area designed by the Government as economically depressed.

(2) A statement indicating the time, expenditure, and other acts which the applicant considers necessary to achieve practical application of the invention, and the applicant's offer to invest that sum and to perform such acts if the license is granted;

(3) A statement whether the applicant would be willing to accept a license for all or less than all fields of use of the invention throughout the United States of America, its territories and possessions, Puerto Rico, and the District of Columbia, or in any lesser geographic portion thereof.

(4) A statement indicating the amount of royalty fees or other consideration, if any, the applicant would be willing to pay the Government for the exclusive license; and

(5) Any other facts which the applicant believes to show it to be in the interests of the United States of America for the Administrator to grant an exclusive license rather than a nonexclusive li-

## PATENT LICENSING REGULATIONS

cense and that such an exclusive license should be granted to the applicant.

### § 1245.208 Processing applications for license.

(a) *Initial review.* Applications for nonexclusive and exclusive licenses under §§ 1245.206 and 1245.207 will be reviewed by the Patent Counsel of the NASA installation having cognizance for the invention and the NASA Assistant General Counsel for Patent Matters, to determine the conformity and appropriateness of the application for license and the availability of the specific invention for the license requested. The Assistant General Counsel for Patent Matters will forward all applications for license conforming to §§ 1245.206(b) and 1245.207(b) to the NASA Inventions and Contributions Board when the invention is available for consideration of the requested license. Prior to forwarding applications for exclusive licenses to the Inventions and Contributions Board, notice in writing will be given to each nonexclusive licensee for the specific invention advising of the receipt of the application for the exclusive license and providing each nonexclusive licensee with a 30-day period for submitting either evidence that practical application of the invention has occurred or is about to occur or, an application for an exclusive license for the invention.

(b) *Recommendations of Inventions and Contributions Board.* The Inventions and Contributions Board shall, in accordance with the basic considerations set forth in §§ 1245.202 and 1245.203, evaluate all applications for license forwarded by the Assistant General Counsel for Patent Matters. Based upon the facts presented to the Inventions and Contributions Board in the application and any other facts in its possession, the Inventions and Contributions Board shall recommend to the Administrator: (1) Whether a nonexclusive or exclusive license should be granted, (2) the identity of the licensee, and (3) any special terms or conditions of the license.

(c) *Determination of Administrator and grant of nonexclusive licenses.* The Administrator shall review the recommendations of the Inventions and Contributions Board and shall determine whether to grant the nonexclusive license as recommended by the Board. If the Administrator determines to grant the license, the license will be granted upon the negotiation of the appropriate terms and conditions of the Office of General Counsel.

(d) *Determination of Administrator and grant of exclusive licenses—(1) Notice.* If the Administrator determines that the best interest of the United States will be served by the granting of an exclusive license in accordance with the basic considerations set forth in §§ 1245.202 and 1245.203, a notice shall be published in the FEDERAL REGISTER announcing the intent to grant the exclusive license, the identification of the invention, special terms or conditions of the proposed license, and a statement that NASA will grant the exclusive license unless within 30 days of the publication of such notice the Inventions and Contributions Board receives in writing

any of the following together with supporting documentation:

(i) A statement from any person setting forth reasons why it would not be in the best interest of the United States to grant the proposed exclusive license; or

(ii) An application for a nonexclusive license under such invention, in accordance with § 1245.206(b), in which applicant states that he has already brought or is likely to bring the invention to practical application within a reasonable period.

The Inventions and Contributions Board shall, upon receipt of a written request within the 30 days' notice period, grant an extension of 30 days for the submission of the documents designated above.

(2) *Recommendation of Inventions and Contributions Board.* Upon the expiration of the period required by subparagraph (1) of this paragraph, the Board shall review all written responses to the notice and shall then recommend to the Administrator whether to grant the exclusive license as the Board initially recommended or whether a different form of license, if any, should instead be granted.

(3) *Grant of exclusive licenses.* The Administrator shall review the Board's recommendation and shall determine if the interest of the United States would best be served by the grant of an exclusive license as recommended by the Board. If the Administrator determines to grant the exclusive license, the license will be granted upon the negotiation of the appropriate terms and conditions by the Office of General Counsel.

### § 1245.209 Royalties and fees.

(a) Normally, a nonexclusive license for the practical application of an invention granted to a U.S. citizen or company will not require the payment of royalties; however, NASA may require other consideration.

(b) An exclusive license for an invention may require the payment of royalties, fees or other consideration when the licensing circumstances and the basic considerations in § 1245.202, considered together, indicate that it is in the public interest to do so.

### § 1245.210 Reports.

A license shall require the licensee to submit periodic reports of his efforts to work the invention. The reports shall contain information within his knowledge, or which he may acquire under normal business practice, pertaining to the commercial use that is being made of the invention and such other information which the Administrator may determine pertinent to the licensing program and which is specified in the license.

### § 1245.211 Revocation of licenses.

(a) Any license granted pursuant to § 1245.203 may be revoked, either in part or in its entirety, by the Administrator if in his opinion the licensee at any time shall fail to use adequate efforts to bring to or achieve practical application of the invention in accordance with the terms of the license, or if the licensee at any

time shall default in making any report required by the license, or shall make any false report, or shall commit any breach of any covenant or agreement therein contained, and shall fail to remedy any such default, false report, or breach within 30 days after written notice, or if the patent is deemed unenforceable either by the Attorney General or a final decision of a U.S. court.

(b) Any license granted pursuant to § 1245.204(a) may be revoked, either in part or in its entirety, by the Administrator if in his opinion such revocation is necessary to achieve the earliest practical application of the invention pursuant to an application for exclusive license submitted in accordance with § 1245.207, or the licensee at any time shall breach any covenant or agreement contained in the license, and shall fail to remedy any such breach within 30 days after written notice thereof.

(c) Before revoking any license granted pursuant to this Subpart 2 for any cause, there will be furnished to the licensee a written notice of intention to revoke the license, and the licensee will be allowed 30 days after such notice in which to appeal and request a hearing before the Inventions and Contributions Board on the question of revocation. After a hearing, the Inventions and Contributions Board shall transmit to the Administrator the record of proceedings, its findings of fact, and its recommendation whether the license should be revoked either in part or in its entirety. The Administrator shall review the recommendation of the Board and determine whether to revoke the license in part or in its entirety. Revocation of a license shall include revocation of all sublicenses which have been granted.

### § 1245.212 Appeals.

Any person desiring to file an appeal pursuant to § 1245.211(c) shall address the appeal to Chairman, Inventions and Contributions Board. Any person filing an appeal shall be afforded an opportunity to be heard before the Inventions and Contributions Board, and to offer evidence in support of his appeal. The procedures to be followed in any such matter shall be determined by the Administrator. The Board shall make findings of fact and recommendations with respect to disposition of the appeal. The decision on the appeal shall be made by the Administrator, and such decision shall be final and conclusive, except on questions of law, unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence.

### § 1245.213 Litigation.

An exclusive licensee shall be granted the right to sue at his own expense any party who infringes the rights set forth in his license and covered by the licensed patent. The licensee may join the Government, upon consent of the Attorney General, as a party complainant in such suit, but without expense to the Government and the licensee shall pay costs and any final judgment or decree that may be rendered against the Govern-

## PATENT LICENSING REGULATIONS

ment in such suit. The Government shall also have an absolute right to intervene in any such suit at its own expense. The licensee shall be obligated to promptly furnish to the Government, upon request, copies of all pleadings and other papers filed in any such suit and of evidence adduced in proceedings relating to the licensed patent including, but not limited to, negotiations for settlement and agreements settling claims by a licensee based on the licensed patent, and all other books, documents, papers, and

records pertaining to such suit. If, as a result of any such litigation, the patent shall be declared invalid, the licensee shall have the right to surrender his license and be relieved from any further obligation thereunder.

### § 1245.214 Address of communications.

(a) Communications to the Assistant General Counsel for Patent Matters in accordance with §§ 1245.206 and 1245.207 and requests for information concerning licenses for NASA inventions should be

addressed to the Assistant General Counsel for Patent Matters, Code GP, National Aeronautics and Space Administration, Washington, D.C. 20546.

(b) Communications to the Inventions and Contributions Board in accordance with §§ 1245.208, 1245.211, and 1245.212 should be addressed to Chairman, Inventions and Contributions Board, National Aeronautics and Space Administration, Washington, D.C. 20546.

*Effective date.* The regulations set forth in this subpart 2 are effective April 1, 1972.

JAMES C. FLETCHER,  
*Administrator.*

## FOREIGN PATENT LICENSING REGULATIONS

Selected NASA inventions are also available for licensing in countries other than the United States in accordance with the NASA Foreign Patent Licensing Regulation (14 C.F.R. 1245.4), a copy of which is available from any NASA Patent Counsel.

# Subject Categories

(1969—1974)

## 01 Aerodynamics

Includes aerodynamics of bodies, combinations, internal flow in ducts and turbomachinery; wings, rotors, and control surfaces. For applications see: 02 Aircraft and 32 Space Vehicles. For related information see also: 12 Fluid Mechanics; and 33 Thermodynamics and Combustion.

## 02 Aircraft

Includes fixed-wing airplanes, helicopters, gliders, balloons, ornithopters, etc.; and specific types of complete aircraft (e.g., ground effect machines, STOL, and VTOL); flight tests; operating problems (e.g., sonic boom); safety and safety devices; economics; and stability and control. For basic research see: 01 Aerodynamics. For related information see also: 31 Space Vehicles; and 32 Structural Mechanics.

## 03 Auxiliary Systems

Includes fuel cells, energy conversion cells, and solar cells; auxiliary gas turbines; hydraulic, pneumatic and electrical systems; actuators; and inverters. For related information see also: 09 Electronic Equipment; 22 Nuclear Engineering; and 28 Propulsion Systems.

## 04 Biosciences

Includes aerospace medicine, exobiology, radiation effects on biological systems; physiological and psychological factors. For related information see also: 05 Biotechnology.

## 05 Biotechnology

Includes life support systems, human engineering; protective clothing and equipment; crew training and evaluation, and piloting. For related information see also: 04 Biosciences

## 06 Chemistry

Includes chemical analysis and identification (e.g., spectroscopy). For applications see: 17 Materials, Metallic; 18 Materials, Nonmetallic; and 27 Propellants.

## 07 Communications

Includes communications equipment and techniques; noise; radio and communications blackout; modulation telemetry; tracking radar and optical observation; and wave propagation. For basic research see: 23 Physics, General; and 21 Navigation.

## 08 Computers

Includes computer operation and programming; and data processing. For applications, see specific categories. For related information see also: 19 Mathematics.

## 09 Electronic Equipment

Includes electronic test equipment and maintainability; component parts, e.g., electron tubes, tunnel diodes, transistors, integrated circuitry; microminiaturization. For basic research see: 10 Electronics. For related information see also: 07 Communications and 21 Navigation.

## 10 Electronics

Includes circuit theory; and feedback and control theory. For applications see: 09 Electronic Equipment. For related information see specific Physics categories.

## 11 Facilities, Research and Support

Includes airports; lunar and planetary bases including associated vehicles; ground support systems; related logistics; simulators; test facilities (e.g., rocket engine test stands, shock tubes, and wind tunnels); test ranges; and tracking stations.

## 12 Fluid Mechanics

Includes boundary-layer flow; compressible flow; gas dynamics; hydrodynamics; and turbulence. For related information see also: 01 Aerodynamics; and 33 Thermodynamics and Combustion.

## 13 Geophysics

Includes aeronomy; upper and lower atmosphere studies; oceanography; cartography; and geodesy. For related information see also: 20 Meteorology; 29 Space Radiation; and 30 Space Sciences.

## 14 Instrumentation and Photography

Includes design, installation, and testing of instrumentation systems; gyroscopes; measuring instruments and gages; recorders, transducers; aerial photography; and telescopes and cameras.

## 15 Machine Elements and Processes

Includes bearings, seals, pumps, and other mechanical equipment; lubrication, friction, and wear; manufacturing processes and quality control; reliability; drafting; and materials fabrication, handling, and inspection.

## 16 Masers

Includes applications of masers and lasers. For basic research see: 26 Physics, Solid-State.

## 17 Materials, Metallic

Includes cermets; corrosion; physical and mechanical properties of materials; metallurgy; and applications as structural materials. For basic research see: 06 Chemistry. For related information see also: 18 Materials, Nonmetallic; and 32 Structural Mechanics.



## **18 Materials, Nonmetallic**

Includes corrosion; physical and mechanical properties of materials (e.g., plastics); and elastomers, hydraulic fluids, etc. For basic research see: 06 Chemistry. For related information see also: 17 Materials, Metallic; 27 Propellants; and 32 Structural Mechanics.

## **19 Mathematics**

Includes calculation methods and theory; and numerical analysis. For applications see specific categories. For related information see also: 08 Computers.

## **20 Meteorology**

Includes climatology; weather forecasting; and visibility studies. For related information see also: 13 Geophysics; and 30 Space Sciences.

## **21 Navigation**

Includes guidance; autopilots; star and planet tracking; inertial platforms; and air traffic control. For related information see also: 07 Communications.

## **22 Nuclear Engineering**

Includes nuclear reactors and nuclear heat sources used for propulsion and auxiliary power. For basic research see: 24 Physics, Atomic, Molecular, and Nuclear. For related information see also: 03 Auxiliary Systems; and 28 Propulsion Systems.

## **23 Physics, General**

Includes acoustics, cryogenics, mechanics, and optics. For astrophysics see: 30 Space Sciences. For geophysics and related information see also: 13 Geophysics, 20 Meteorology, and 29 Space Radiation.

## **24 Physics, Atomic, Molecular, and Nuclear**

Includes atomic, molecular and nuclear physics. For applications see: 22 Nuclear Engineering. For related information see also: 29 Space Radiation.

## **25 Physics, Plasma**

Includes magnetohydrodynamics. For applications see: 28 Propulsion Systems.

## **26 Physics, Solid-State**

Includes semiconductor theory; and superconductivity. For applications see: 16 Masers. For related information see also: 10 Electronics.

## **27 Propellants**

Includes fuels; igniters; and oxidizers. For basic re-

search see: 06 Chemistry; and 33 Thermodynamics and Combustion. For related information see also: 28 Propulsion Systems.

## **28 Propulsion Systems**

Includes air breathing, electric, liquid, solid, and magnetohydrodynamic propulsion. For nuclear propulsion see: 22 Nuclear Engineering. For basic research see: 23 Physics, General; and 33 Thermodynamics and Combustion. For applications see: 31 Space Vehicles. For related information see also: 27 Propellants.

## **29 Space Radiation**

Includes cosmic radiation; solar flares; solar radiation; and Van Allen radiation belts. For related information see also: 13 Geophysics, and 24 Physics, Atomic, Molecular, and Nuclear.

## **30 Space Sciences**

Includes astronomy and astrophysics; cosmology; lunar and planetary flight and exploration; and theoretical analysis of orbits and trajectories. For related information see also: 11 Facilities, Research and Support; and 31 Space Vehicles.

## **31 Space Vehicles**

Includes launch vehicles; manned space capsules; clustered and multistage rockets; satellites; sounding rockets and probes; and operating problems. For basic research see: 30 Space Sciences. For related information see also: 28 Propulsion Systems; and 32 Structural Mechanics.

## **32 Structural Mechanics**

Includes structural element design and weight analysis; fatigue; thermal stress; impact phenomena; vibration; flutter; inflatable structures; and structural tests. For related information see also: 17 Materials, Metallic; and 18 Materials, Nonmetallic.

## **33 Thermodynamics and Combustion**

Includes ablation, cooling, heating, heat transfer, thermal balance, and other thermal effects; and combustion theory. For related information see also: 12 Fluid Mechanics; and 27 Propellants.

## **34 General**

Includes information of a broad nature related to industrial applications and technology, and to basic research; defense aspects; information retrieval; management; law and related legal matters; and legislative hearings and documents.

# TABLE OF CONTENTS

## Section 1 • Abstracts

(Subject Categories 1975— )

### AERONAUTICS

Includes aeronautics (general); aerodynamics; air transportation and safety; aircraft communications and navigation; aircraft design, testing and performance; aircraft instrumentation; aircraft propulsion and power; aircraft stability and control; and research and support facilities (air).

For related information see also *Astronautics*.

#### 01 AERONAUTICS (GENERAL)

#### 02 AERODYNAMICS

Includes aerodynamics of bodies, combinations, wings, rotors, and control surfaces; and internal flow in ducts and turbomachinery.

For related information see also 34 *Fluid Mechanics and Heat Transfer*.

#### 03 AIR TRANSPORTATION AND SAFETY

Includes passenger and cargo air transport operations; and aircraft accidents.

For related information see also 16 *Space Transportation* and 85 *Urban Technology and Transportation*.

#### 04 AIRCRAFT COMMUNICATIONS AND NAVIGATION

Includes digital and voice communication with aircraft; air navigation systems (satellite and ground based); and air traffic control.

For related information see also 17 *Spacecraft Communications, Command and Tracking* and 32 *Communications*.

#### 05 AIRCRAFT DESIGN, TESTING AND PERFORMANCE

Includes aircraft simulation technology.

For related information see also 18 *Spacecraft Design, Testing and Performance* and 39 *Structural Mechanics*.

#### 06 AIRCRAFT INSTRUMENTATION

Includes cockpit and cabin display devices; and flight instruments.

For related information see also 19 *Spacecraft Instrumentation* and 35 *Instrumentation and Photography*.

#### 07 AIRCRAFT PROPULSION AND POWER

Includes prime propulsion systems and systems components, e.g., gas turbine engines and compressors; and on-board auxiliary power plants for aircraft.

For related information see also 20 *Spacecraft Propulsion and Power*, 28 *Propellants and Fuels*, and 44 *Energy Production and Conversion*.

#### 08 AIRCRAFT STABILITY AND CONTROL

Includes aircraft handling qualities; piloting; flight controls; and autopilots.

### 09 RESEARCH AND SUPPORT FACILITIES (AIR)

Includes airports, hangars and runways; aircraft repair and overhaul facilities; wind tunnels; shock tube facilities; and engine test blocks.

For related information see also 14 *Ground Support Systems and Facilities (Space)*.

### ASTRONAUTICS

Includes astronautics (general); astrodynamics; ground support systems and facilities (space); launch vehicles and space vehicles; space transportation; spacecraft communications, command and tracking; spacecraft design, testing and performance; spacecraft instrumentation; and spacecraft propulsion and power.

For related information see also *Aeronautics*.

#### 12 ASTRONAUTICS (GENERAL)

For extraterrestrial exploration see 91 *Lunar and Planetary Exploration*.

#### 13 ASTRODYNAMICS

Includes powered and free-flight trajectories; and orbit and launching dynamics.

#### 14 GROUND SUPPORT SYSTEMS AND FACILITIES (SPACE)

Includes launch complexes, research and production facilities; ground support equipment, e.g., mobile transporters; and simulators.

For related information see also 09 *Research and Support Facilities (Air)*.

#### 15 LAUNCH VEHICLES AND SPACE VEHICLES

Includes boosters; manned orbital laboratories; reusable vehicles; and space stations.

#### 16 SPACE TRANSPORTATION

Includes passenger and cargo space transportation, e.g., shuttle operations; and rescue techniques.

For related information see also 03 *Air Transportation and Safety* and 85 *Urban Technology and Transportation*.

#### 17 SPACECRAFT COMMUNICATIONS, COMMAND AND TRACKING

Includes telemetry; space communications networks; astronavigation; and radio blackout.

For related information see also 04 *Aircraft Communications and Navigation* and 32 *Communications*.

#### 18 SPACECRAFT DESIGN, TESTING AND PERFORMANCE

Includes spacecraft thermal and environmental control; and attitude control.

For life support systems see 54 *Man/System Technology and Life Support*. For related information see also 05 *Aircraft Design, Testing and Performance* and 39 *Structural Mechanics*.

## **19 SPACECRAFT INSTRUMENTATION**

For related information see also *06 Aircraft Instrumentation* and *35 Instrumentation and Photography*.

## **20 SPACECRAFT PROPULSION AND POWER**

Includes main propulsion systems and components, e.g., rocket engines; and spacecraft auxiliary power sources.

For related information see also *07 Aircraft Propulsion and Power*, *28 Propellants and Fuels*, and *44 Energy Production and Conversion*.

## **CHEMISTRY AND MATERIALS**

Includes chemistry and materials (general); composite materials; inorganic and physical chemistry; metallic materials; nonmetallic materials; and propellants and fuels.

## **23 CHEMISTRY AND MATERIALS (GENERAL)**

Includes biochemistry and organic chemistry.

## **24 COMPOSITE MATERIALS**

Includes laminates.

## **25 INORGANIC AND PHYSICAL CHEMISTRY**

Includes chemical analysis, e.g., chromatography; combustion theory; electrochemistry; and photochemistry.

For related information see also *77 Thermodynamics and Statistical Physics*.

## **26 METALLIC MATERIALS**

Includes physical, chemical, and mechanical properties of metals, e.g., corrosion; and metallurgy.

## **27 NONMETALLIC MATERIALS**

Includes physical, chemical, and mechanical properties of plastics, elastomers, lubricants, polymers, textiles, adhesives, and ceramic materials.

## **28 PROPELLANTS AND FUELS**

Includes rocket propellants, igniters, and oxidizers; storage and handling; and aircraft fuels.

For related information see also *07 Aircraft Propulsion and Power*, *20 Spacecraft Propulsion and Power*, and *44 Energy Production and Conversion*.

## **ENGINEERING**

Includes engineering (general); communications; electronics and electrical engineering; fluid mechanics and heat transfer; instrumentation and photography; lasers and masers; mechanical engineering; quality assurance and reliability; and structural mechanics.

For related information see also *Physics*.

## **31 ENGINEERING (GENERAL)**

Includes vacuum technology; control engineering; display engineering; and cryogenics.

## **32 COMMUNICATIONS**

Includes land and global communications; communications theory; and optical communications.

For related information see also *04 Aircraft Communications and Navigation* and *17 Spacecraft Communications, Command and Tracking*.

## **33 ELECTRONICS AND ELECTRICAL ENGINEERING**

Includes test equipment and maintainability; components, e.g., tunnel diodes and transistors; microminiaturization; and integrated circuitry.

For related information see also *60 Computer Operations and Hardware* and *76 Solid-State Physics*.

## **34 FLUID MECHANICS AND HEAT TRANSFER**

Includes boundary layers; hydrodynamics; fluidics; mass transfer; and ablation cooling.

For related information see also *02 Aerodynamics* and *77 Thermodynamics and Statistical Physics*.

## **35 INSTRUMENTATION AND PHOTOGRAPHY**

Includes remote sensors; measuring instruments and gages; detectors; cameras and photographic supplies; and holography.

For aerial photography see *43 Earth Resources*. For related information see also *06 Aircraft Instrumentation* and *19 Spacecraft Instrumentation*.

## **36 LASERS AND MASERS**

Includes parametric amplifiers.

## **37 MECHANICAL ENGINEERING**

Includes auxiliary systems (non-power); machine elements and processes; and mechanical equipment.

## **38 QUALITY ASSURANCE AND RELIABILITY**

Includes product sampling procedures and techniques; and quality control.

## **39 STRUCTURAL MECHANICS**

Includes structural element design and weight analysis; fatigue; and thermal stress.

For applications see *05 Aircraft Design, Testing and Performance* and *18 Spacecraft Design, Testing and Performance*.

## **GEOSCIENCES**

Includes geosciences (general); earth resources; energy production and conversion; environment pollution; geophysics; meteorology and climatology; and oceanography.

For related information see also *Space Sciences*.

## **42 GEOSCIENCES (GENERAL)**

#### **43 EARTH RESOURCES**

Includes remote sensing of earth resources by aircraft and spacecraft; photogrammetry; and aerial photography.

For instrumentation see *35 Instrumentation and Photography*.

#### **44 ENERGY PRODUCTION AND CONVERSION**

Includes specific energy conversion systems, e.g., fuel cells and batteries; global sources of energy; fossil fuels; geophysical conversion; hydroelectric power; and wind power.

For related information see also *07 Aircraft Propulsion and Power*, *20 Spacecraft Propulsion and Power*, *28 Propellants and Fuels*, and *85 Urban Technology and Transportation*.

#### **45 ENVIRONMENT POLLUTION**

Includes air, noise, thermal and water pollution; environment monitoring; and contamination control.

#### **46 GEOPHYSICS**

Includes aeronomy; upper and lower atmosphere studies; ionospheric and magnetospheric physics; and geomagnetism.

For space radiation see *93 Space Radiation*.

#### **47 METEOROLOGY AND CLIMATOLOGY**

Includes weather forecasting and modification.

#### **48 OCEANOGRAPHY**

Includes biological, dynamic and physical oceanography; and marine resources.

### **LIFE SCIENCES**

Includes life sciences (general); aerospace medicine; behavioral sciences; man/system technology and life support; and planetary biology.

#### **51 LIFE SCIENCES (GENERAL)**

Includes genetics.

#### **52 AEROSPACE MEDICINE**

Includes physiological factors; biological effects of radiation; and weightlessness.

#### **53 BEHAVIORAL SCIENCES**

Includes psychological factors; individual and group behavior; crew training and evaluation; and psychiatric research.

#### **54 MAN/SYSTEM TECHNOLOGY AND LIFE SUPPORT**

Includes human engineering; biotechnology; and space suits and protective clothing.

#### **55 PLANETARY BIOLOGY**

Includes exobiology; and extraterrestrial life.

### **MATHEMATICAL AND COMPUTER SCIENCES**

Includes mathematical and computer sciences (general); computer operations and hardware; computer programming and software; computer systems; cybernetics; numerical analysis; statistics and probability; systems analysis; and theoretical mathematics.

#### **59 MATHEMATICAL AND COMPUTER SCIENCES (GENERAL)**

#### **60 COMPUTER OPERATIONS AND HARDWARE**

Includes computer graphics and data processing.

For components see *33 Electronics and Electrical Engineering*.

#### **61 COMPUTER PROGRAMMING AND SOFTWARE**

Includes computer programs, routines, and algorithms.

#### **62 COMPUTER SYSTEMS**

Includes computer networks.

#### **63 CYBERNETICS**

Includes feedback and control theory.

For related information see also *54 Man/System Technology and Life Support*.

#### **64 NUMERICAL ANALYSIS**

Includes iteration, difference equations, and numerical approximation.

#### **65 STATISTICS AND PROBABILITY**

Includes data sampling and smoothing; Monte Carlo method; and stochastic processes.

#### **66 SYSTEMS ANALYSIS**

Includes mathematical modeling; network analysis; and operations research.

#### **67 THEORETICAL MATHEMATICS**

Includes topology and number theory.

### **PHYSICS**

Includes physics (general); acoustics; atomic and molecular physics; nuclear and high-energy physics; optics; plasma physics; solid-state physics; and thermodynamics and statistical physics.

For related information see also *Engineering*.

#### **70 PHYSICS (GENERAL)**

For geophysics see *46 Geophysics*. For astrophysics see *90 Astrophysics*. For solar physics see *92 Solar Physics*.

## **71 ACOUSTICS**

Includes sound generation, transmission, and attenuation.

For noise pollution see *45 Environment Pollution*.

## **72 ATOMIC AND MOLECULAR PHYSICS**

Includes atomic structure and molecular spectra.

## **73 NUCLEAR AND HIGH-ENERGY PHYSICS**

Includes elementary and nuclear particles; and reactor theory.

For space radiation see *93 Space Radiation*.

## **74 OPTICS**

Includes light phenomena.

## **75 PLASMA PHYSICS**

Includes magnetohydrodynamics and plasma fusion.

For ionospheric plasmas see *46 Geophysics*. For space plasmas see *90 Astrophysics*.

## **76 SOLID-STATE PHYSICS**

Includes superconductivity.

For related information see also *33 Electronics and Electrical Engineering* and *36 Lasers and Masers*.

## **77 THERMODYNAMICS AND STATISTICAL PHYSICS**

Includes quantum mechanics; and Bose and Fermi statistics.

For related information see also *25 Inorganic and Physical Chemistry* and *34 Fluid Mechanics and Heat Transfer*.

## **SOCIAL SCIENCES**

Includes social sciences (general); administration and management; documentation and information science; economics and cost analysis; law and political science; and urban technology and transportation.

## **80 SOCIAL SCIENCES (GENERAL)**

Includes educational matters.

## **81 ADMINISTRATION AND MANAGEMENT**

Includes management planning and research.

## **82 DOCUMENTATION AND INFORMATION SCIENCE**

Includes information storage and retrieval technology; micrography; and library science.

For computer documentation see *61 Computer Programming and Software*.

## **83 ECONOMICS AND COST ANALYSIS**

Includes cost effectiveness studies.

## **84 LAW AND POLITICAL SCIENCE**

Includes space law; international law; international cooperation; and patent policy.

## **85 URBAN TECHNOLOGY AND TRANSPORTATION**

Includes applications of space technology to urban problems; technology transfer; technology assessment; and surface and mass transportation.

For related information see *03 Air Transportation and Safety*, *16 Space Transportation*, and *44 Energy Production and Conversion*.

## **SPACE SCIENCES**

Includes space sciences (general); astronomy; astrophysics; lunar and planetary exploration; solar physics; and space radiation.

For related information see also *Geosciences*.

## **88 SPACE SCIENCES (GENERAL)**

## **89 ASTRONOMY**

Includes radio and gamma-ray astronomy; celestial mechanics; and astrometry.

## **90 ASTROPHYSICS**

Includes cosmology; and interstellar and interplanetary gases and dust.

## **91 LUNAR AND PLANETARY EXPLORATION**

Includes planetology; and manned and unmanned flights.

For spacecraft design see *18 Spacecraft Design, Testing and Performance*. For space stations see *15 Launch Vehicles and Space Vehicles*.

## **92 SOLAR PHYSICS**

Includes solar activity, solar flares, solar radiation and sunspots.

## **93 SPACE RADIATION**

Includes cosmic radiation; and inner and outer earth's radiation belts.

For biological effects of radiation see *52 Aerospace Medicine*. For theory see *73 Nuclear and High-Energy Physics*.

## **GENERAL**

## **99 GENERAL**

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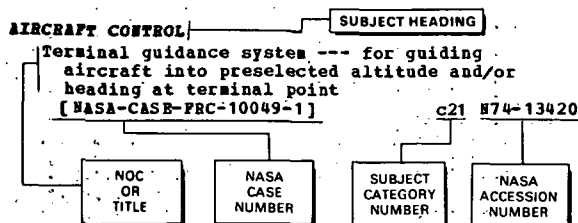
# Subject Index

NASA PATENT ABSTRACTS BIBLIOGRAPHY

JULY 1976

## Section 2

### Typical Subject Index Listing



The subject heading is the key to the subject content of the document. A brief description of the document, e.g., title, title plus a title extension, or Notation of Content (NOC), is included for each subject entry to indicate the subject heading context; these descriptions are arranged under each subject heading in ascending accession number order. The NASA Case Number serves as the prime access number to the patent documents. The Subject Category Number indicates the category in Section 1 (Abstracts) in which the patent citation and abstract are located. The NASA accession number denotes the number by which the citation is identified within the subject category.

## A

### ABLATION

Transpirationally cooled heat ablation system for interplanetary spacecraft reentry shielding [NASA-CASE-XMS-02677] c31 N70-42075

Hypersonic test facility for studying ablation in models under high pressure and high temperature [NASA-CASE-XLA-00378] c11 N71-15925

Design of hypersonic test facility for ablation tests and performance tests of vehicles under conditions of high temperature and pressure [NASA-CASE-XLA-05378] c11 N71-21475

Ablation sensor for measuring char layer recession rate using electric wires [NASA-CASE-XLA-01794] c33 N71-21586

Ablation sensor for measuring surface ablation rate of material on vehicles entering earths atmosphere on entry into planetary atmospheres [NASA-CASE-XLA-01791] c14 N71-22991

Ablative system with liquid carrying ablative material bodies and forming self-replacing ablative surface [NASA-CASE-LEW-10359] c33 N72-25911

### ABLATIVE MATERIALS

Filling honeycomb matrix with deaerated paste filler [NASA-CASE-XMS-01108] c15 N69-24322

Sensor device with switches for measuring surface recession of charring and noncharring ablators [NASA-CASE-XLA-01781] c14 N69-39975

Vacuum method for molding thermosetting compounds used as ablative materials [NASA-CASE-XLA-01091] c15 N71-10672

Ablative resins used for retarding regression in ablative material [NASA-CASE-XLE-05913] c33 N71-14032

Design, development, and characteristics of ablation structures [NASA-CASE-XMS-01816] c33 N71-15623

Method and apparatus for fabrication of heat insulating and ablative reentry structure [NASA-CASE-XMS-02009] c33 N71-20834

Production and application of sprayable fiber reinforced ablation material [NASA-CASE-XLA-04251] c18 N71-26100

Ablative heat shield for protection from aerodynamic heating of reentry spacecraft [NASA-CASE-MSC-12143-1] c33 N72-17947

Ablative system with liquid carrying ablative material bodies and forming self-replacing

ablative surface [NASA-CASE-LEW-10359] c33 N72-25911

Carrier liquid system containing bodies of ablative material [NASA-CASE-LEW-10359-2] c33 N73-25952

Ablation article and surface for analyzing flow transition on ablative surface [NASA-CASE-LAR-10439-1] c33 N73-27796

Dual measurement ablation sensor [NASA-CASE-LAR-10105-1] c33 N74-15652

### ABORT APPARATUS

Coupling device for linear shaped charge for space vehicle abort system [NASA-CASE-XLA-00189] c33 N70-36846

### ABRASION RESISTANCE

Zinc dust formulation for abrasion resistant steel coatings [NASA-CASE-GSC-10361-1] c18 N72-23581

Abrasion resistant coatings for plastic surfaces [NASA-CASE-ARC-10915-1] c27 N76-13292

### ABSORBENTS

Absorbent apparatus for separating gas from liquid-gas stream used in environmental control under zero gravity conditions [NASA-CASE-XMS-01492] c05 N70-41297

Fluid flow control valve for regulating fluids in molecular quantities [NASA-CASE-XLE-00703] c15 N71-15967

Noncontaminating swab with absorbent end covered with netted envelope to prevent egress of absorbent material [NASA-CASE-MFS-18100] c15 N72-11390

Protein sterilization of firefly luciferase without denaturation [NASA-CASE-GSC-10225-1] c06 N73-27086

### ABSORBERS (MATERIALS)

Broadband chokes and absorbers to reduce spurious radiation patterns of antenna array caused by support structures [NASA-CASE-XMS-05303] c07 N69-27462

Analytical photoionization mass spectrometer with argon gas filter between light source and monochromator [NASA-CASE-LAR-10180-1] c06 N71-13461

Development of filter system for control of outgas contamination in vacuum conditions using absorbent beds of molecular sieve zeolite, silica gel, and charcoal [NASA-CASE-MFS-14711] c15 N71-26185

Development and characteristics of calorimeter with integral heat sink for maintenance of constant temperature [NASA-CASE-XMP-04208] c33 N71-29051

### ABSORPTION

Cross linked polymer system for oil or fat absorption properties [NASA-CASE-NPO-11609-1] c06 N72-22114

Method and apparatus for background signal reduction in opto-acoustic absorption measurement [NASA-CASE-NPO-13683-1] c35 N75-29383

### ABSORPTION CROSS SECTIONS

Radiation source and detection system for measuring amount of liquid inside tanks independently of liquid configuration [NASA-CASE-MSC-12280] c27 N71-16348

### ABSORPTIVITY

Scattering independent determination of absorption and emission coefficients and radiative equilibrium state [NASA-CASE-NPO-13677-1] c35 N75-16791

Detector absorptivity measuring method and apparatus [NASA-CASE-LAR-10907-1] c35 N75-19629



## AC GENERATORS

## AC GENERATORS

Alternating current signal generator providing plurality of amplitude modulated output signals  
[NASA-CASE-XNP-05612] c09 N69-21468

Improved alternator with windings of superconducting materials acting as permanent magnet  
[NASA-CASE-XLE-02824] c03 N69-39890

Superconducting alternator design with cryogenic fluid for cooling windings below critical temperature  
[NASA-CASE-XLE-02823] c09 N71-23443

## ACCELERATION

Single grid accelerator system for electron bombardment type ion thruster  
[NASA-CASE-XLE-10453-2] c28 N73-27699

## ACCELERATION (PHYSICS)

Centrifuge mounted motion simulator with elevator mechanism  
[NASA-CASE-XAC-00399] c14 N70-34815

Gravity device for accurate and rapid indication of relative gravity conditions aboard accelerating carrier  
[NASA-CASE-XMP-00424] c11 N70-38196

Development of method for producing artificial gravity in manned spacecraft  
[NASA-CASE-XNP-02595] c31 N71-21881

Vibration control of flexible bodies in steady accelerating environment  
[NASA-CASE-LAR-10106-1] c15 N71-27169

G-load measuring and indicator apparatus --- for aircraft  
[NASA-CASE-ARC-10806] c14 N74-27872

Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c11 N74-30597

G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c35 N75-29381

## ACCELERATION PROTECTION

Astronaut restraint suit for high acceleration protection  
[NASA-CASE-XAC-00405] c05 N70-41819

## ACCELERATION STRESSES (PHYSIOLOGY)

Development of method for producing artificial gravity in manned spacecraft  
[NASA-CASE-XNP-02595] c31 N71-21881

## ACCELERATION TOLERANCE

Electronic detection system for peak acceleration limits in vibrational testing of spacecraft components  
[NASA-CASE-NPO-10556] c14 N71-27185

## ACCELERATORS

Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c09 N75-11997

Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c37 N76-11441

## ACCELEROMETERS

Superconductive accelerometer employing variable force principle to determine acceleration of bodies  
[NASA-CASE-XMP-01099] c14 N71-15969

Describing device for velocity control of electromechanical drive mechanism of scanning mirror of interferometer  
[NASA-CASE-XGS-03532] c14 N71-17627

Omnidirectional liquid filled accelerometer design with liquid and housing temperature compensation  
[NASA-CASE-HQN-10780] c14 N71-30265

Development of combined velocimeter and accelerometer based on color changes in liquid crystalline material subjected to shear stresses  
[NASA-CASE-ERC-10292] c14 N72-25410

Temperature compensated digital inertial sensor --- circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c14 N74-15094

Recording apparatus  
[NASA-CASE-LAR-11353-1] c14 N74-20020

Accelerometer telemetry system --- for monitoring motor responses  
[NASA-CASE-ARC-10849-1] c35 N75-20685

## ACCEPTOR MATERIALS

The 3-5 photocathode with nitrogen doping for increased quantum efficiency --- using acceptor materials  
[NASA-CASE-NPO-12134-1] c33 N75-16745

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## ACCUMULATORS

Direct radiation cooling of linear beam collector tubes  
[NASA-CASE-XNP-09227] c15 N69-24319

Regenerative cooling system for small rocket engine having restart capability and using noncryogenic hypergolic propellants  
[NASA-CASE-XLE-00685] c28 N70-41992

Small plasma probe using tungsten wire collector in tubular shield  
[NASA-CASE-XLE-02578] c25 N71-20747

Electrostatic charged particle collector containing stacked electrodes for microwave tube  
[NASA-CASE-LEW-11192-1] c09 N73-13208

An improved accumulator  
[NASA-CASE-MPS-19287-1] c34 N76-14418

## ACETALS

Synthesis of schiff bases for heat shields by acetal amine reactions  
[NASA-CASE-XMP-08652] c06 N71-11243

## ACETYLENE

Preparation of dicyanoacetylene and vinylidene copolymers using organic compounds  
[NASA-CASE-XNP-03250] c06 N71-23500

## ACOUSTIC ATTENUATION

Ultrasonic calibration device --- for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c35 N76-15432

## ACOUSTIC DUCTS

Noise suppressor --- for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c02 N74-32418

## ACOUSTIC IMPEDANCE

Method and transducer device for detecting presence of hydrogen gas  
[NASA-CASE-XMP-03873] c06 N69-39733

## ACOUSTIC MEASUREMENTS

Instrumentation for measuring aircraft noise and sonic boom  
[NASA-CASE-LAR-11476-1] c35 N75-27334

## ACOUSTIC PROPAGATION

Material suspension within an acoustically excited resonant chamber --- at near weightless conditions  
[NASA-CASE-NPO-13263-1] c12 N75-24774

## ACOUSTIC PROPERTIES

Development of wind tunnel microphone structure to minimize effects of vibrations and eliminate unwanted signals in microphone output  
[NASA-CASE-XNP-00250] c11 N71-28779

Acoustical transducer calibrating system including differential pressure activating device  
[NASA-CASE-FRC-10060-1] c14 N73-27379

## ACOUSTICS

Acoustic energy shaping  
[NASA-CASE-NPO-13802-1] c71 N76-18886

## ACOUSTO-OPTICS

Acoustic vibration test apparatus for wiring harnesses  
[NASA-CASE-MSC-15158-1] c14 N72-17325

## ACRYLATES

Ablative resins used for retarding regression in ablative material  
[NASA-CASE-XLE-05913] c33 N71-14032

## ACTIVATION ENERGY

Heat activated emf cells with aluminum anode  
[NASA-CASE-LEW-11359] c03 N71-28579

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[NASA-CASE-LEW-11359-2] c03 N72-20034

## ACTUATOR DISKS

Cryogenic gyroscope housing --- with annular disks for gas spin-up  
[NASA-CASE-MPS-21136-1] c23 N74-18323

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Electromechanical actuator and its use in rocket thrust control valve  
[NASA-CASE-XNP-05975] c15 N69-23185

Power controlled bimetallic electromechanical actuator for accurate, timely, and reliable response to remote control signal  
[NASA-CASE-XNP-09776] c09 N69-39929

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Hermetically sealed explosive release mechanism for actuator device

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[NASA-CASE-XGS-00824] c15 N71-16078  
Burst diaphragm flow initiator for installation  
in short duration wind tunnels  
[NASA-CASE-MPS-12915] c11 N71-17600  
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respectively perpendicular axes and capable of  
actuating signal generators for attitude  
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[NASA-CASE-XMS-07487] c15 N71-23255  
Mechanical actuator wherein linear motion  
changes to rotational motion  
[NASA-CASE-XGS-04548] c15 N71-24045  
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of heat radiators  
[NASA-CASE-MSC-11817-1] c15 N71-26611  
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[NASA-CASE-ERC-10022] c15 N71-26635  
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[NASA-CASE-ARC-10131-1] c15 N71-27754  
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[NASA-CASE-ARC-10105] c09 N72-17153  
Mechanically operated hand which can depress  
trigger using touch control device  
[NASA-CASE-MPS-20413] c15 N72-21463  
Hermetically sealed elbow actuator for use in  
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[NASA-CASE-MPS-14710] c09 N72-22195  
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imparting linear motion using elongated output  
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[NASA-CASE-NPO-11222] c15 N72-25456  
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[NASA-CASE-NPO-10244] c15 N72-26371  
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[NASA-CASE-NPO-11340] c15 N72-33477  
Redundant hydraulic control system for actuators  
with three main valve combination  
[NASA-CASE-MPS-20944] c15 N73-13466  
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generator and evacuator  
[NASA-CASE-NPO-11369] c15 N73-13467  
Manual actuator --- for spacecraft exercising  
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[NASA-CASE-MPS-21481-1] c15 N74-18127  
Optically actuated two position mechanical mover  
[NASA-CASE-NPO-13105-1] c15 N74-21060  
Miniature hydraulic actuator --- for control  
surfaces on airfoils  
[NASA-CASE-LAR-11522-1] c15 N74-34881  
Cyclical bi-directional rotary actuator  
[NASA-CASE-GSC-11883-1] c37 N75-29430  
Actuator device for artificial leg  
[NASA-CASE-MPS-23225-1] c54 N75-32767  
**ADAPTERS**  
Camera adapter design for image magnification  
including lens and illuminator  
[NASA-CASE-XMF-03844-1] c14 N71-26474  
**ADAPTIVE CONTROL**  
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control and diagnostic unit and rollback  
points for error correction  
[NASA-CASE-NPO-10567] c08 N71-24633  
Synchronous dc direct-drive system comprising  
multiple-loop hybrid control system  
controlling load directly connected to actuator  
[NASA-CASE-GSC-10065-1] c10 N71-27136  
Versatile ergometer with work load control  
[NASA-CASE-NPS-21109-1] c05 N73-27941  
Adaptive voting computer system  
[NASA-CASE-MSC-13932-1] c08 N74-14920  
**ADAPTIVE FILTERS**  
Adaptive notch filter, using modulation  
techniques for reversed phase noise signal  
[NASA-CASE-XMF-01892] c10 N71-22986  
**ADDING CIRCUITS**  
Circuit diagram and operation of full binary adder  
[NASA-CASE-XGS-00689] c08 N70-34787  
Error correction circuitry for binary signal  
channels  
[NASA-CASE-XNP-03263] c09 N71-18843  
**ADDITIVES**  
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organic Cu/II/ chelate catalytic additive

[NASA-CASE-LAR-10173-1] c27 N71-14090  
Tantalum modified ferritic iron base alloys ---  
for use in high temperature environments  
[NASA-CASE-LEW-12095-1] c26 N76-17233  
**ADENOSINE TRIPHOSPHATE**  
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inherent light levels of ATP in luciferase  
compositions  
[NASA-CASE-XGS-05533] c04 N69-27487  
Detection instrument for light emitted from ATP  
biochemical reaction  
[NASA-CASE-XGS-05534] c23 N71-16355  
Describing method for lyophilization of  
luciferase containing mixtures for use in life  
detection reactions  
[NASA-CASE-XGS-05532] c06 N71-17705  
Automatic device for assaying urine on bacterial  
adenosine triphosphate content  
[NASA-CASE-GSC-11169-2] c05 N73-32011  
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antimicrobial drug susceptibility testing  
[NASA-CASE-GSC-12039-1] c51 N75-26629  
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adhesive coated head portion  
[NASA-CASE-MPS-20299] c15 N72-11392  
**ADHESION TESTS**  
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between high density material and low density  
material  
[NASA-CASE-MPS-13686] c15 N71-18132  
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solar cells to base members or substrates  
[NASA-CASE-XNP-00826] c03 N71-20895  
Method for honeycomb panel bonding by  
thermosetting film adhesive with electrical  
heat means  
[NASA-CASE-XMF-01402] c18 N71-21651  
Etching aluminum alloys with aqueous solution  
containing sulfuric acid, hydrofluoric acid,  
and an alkali metal dischromate for adhesive  
bonding  
[NASA-CASE-XMF-02303] c17 N71-23828  
Adhesive spray process for attaching biomedical  
skin electrodes  
[NASA-CASE-XPR-07658-1] c05 N71-26293  
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mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c37 N75-15992  
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[NASA-CASE-MSC-12619-1] c39 N75-21671  
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[NASA-CASE-LAR-11397-1] c27 N75-29263  
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Centering device with ultrafine adjustment for  
use with roundness measuring apparatus  
[NASA-CASE-XMF-00480] c14 N70-39898  
Slotted fine-adjustment support for optical  
devices  
[NASA-CASE-MPS-20249] c15 N72-11386  
Adjustable support device with jacket screw for  
altering distance between base and supported  
member  
[NASA-CASE-NPO-10721] c15 N72-27484  
Clock setter  
[NASA-CASE-LAR-11458-1] c35 N76-16392  
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Bluff-shaped annular configuration for  
supersonic decelerator for reentry vehicles  
[NASA-CASE-XLE-00222] c02 N70-37939  
Lightweight, variable solidity knitted parachute  
fabric --- for aerodynamic decelerators  
[NASA-CASE-LAR-10776-1] c02 N74-10034  
**AERODYNAMIC CHARACTERISTICS**  
Variable aspect ratio and variable sweep delta  
wing planforms for supersonic aircraft  
[NASA-CASE-XLA-00221] c02 N70-33266  
Designing spacecraft for flight into space,  
atmospheric reentry, and landing at selected  
sites  
[NASA-CASE-XAC-02058] c02 N71-16087  
Spacecraft configurations and aerodynamic  
characteristics of space shuttle systems with  
two reusable stages  
[NASA-CASE-MSC-12433] c31 N73-14854  
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control of vehicles at high supersonic and

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[NASA-CASE-LAR-11140-1] c02 N73-20008
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[NASA-CASE-XLA-00166] c02 N70-34178  
Aerodynamic configuration for aircraft capable of high speed flight and low drag for low speed takeoff or landing upon presently existing airfields  
[NASA-CASE-XLA-00806] c02 N70-34858  
Manned space capsule configuration for orbital flight and atmospheric reentry  
[NASA-CASE-XLA-00149] c31 N70-37938  
Aerodynamic configuration of reentry vehicle heat shield to provide longitudinal and directional stability at hypersonic velocities  
[NASA-CASE-XMS-04142] c31 N70-41631  
Development and characteristics of translating horizontal tail assembly for supersonic aircraft  
[NASA-CASE-XLA-08801-1] c02 N71-11043  
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[NASA-CASE-XLA-03691] c31 N71-15674  
Afterburner-equipped jet engine nacelle with slotted configuration afterbody  
[NASA-CASE-XLA-10450] c28 N71-21493  
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[NASA-CASE-LAR-10557] c02 N72-11018  
Development of auxiliary lifting system to provide ferry capability for entry vehicles  
[NASA-CASE-LAR-10574-1] c11 N73-13257  
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[NASA-CASE-XMF-02263] c02 N74-10907  
Supersonic fan blading --- noise reduction in turbofan engines  
[NASA-CASE-LEW-11402-1] c28 N74-28226
- AERODYNAMIC HEATING**  
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[NASA-CASE-XLA-00892] c33 N71-17897  
Heat flux sensor adapted for mounting on aircraft or spacecraft to measure aerodynamic heat flux inflow to aircraft skin  
[NASA-CASE-XPR-03802] c33 N71-23085  
Ablative heat shield for protection from aerodynamic heating of reentry spacecraft  
[NASA-CASE-HSC-12143-1] c33 N72-17947
- AERODYNAMIC LOADS**  
Directed fluid stream for propeller blade loading control  
[NASA-CASE-XAC-00139] c02 N70-34856
- AERODYNAMIC NOISE**  
Apparatus for reducing aerodynamic noise in a wind tunnel  
[NASA-CASE-MFS-23099-1] c09 N75-32134
- AERODYNAMIC STABILITY**  
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[NASA-CASE-XMF-04163] c02 N71-23007  
Pressure sensor network for measuring liquid dynamic response in flight including fuel tank acceleration, liquid slosh amplitude, and fuel depth monitoring  
[NASA-CASE-XLA-05541] c12 N71-26387  
Spacecraft design with single point aerodynamic and hydrodynamic stability for emergency transport of men from space station to splashdown  
[NASA-CASE-HSC-13281] c31 N72-18859  
Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c02 N74-34475  
High lift aircraft --- with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c05 N75-25914
- AERONAUTICAL ENGINEERING**  
Differential pressure cell insensitive to changes in ambient temperature and extreme overload  
[NASA-CASE-XAC-00042] c14 N70-34816
- AEROSOLS**  
Liquid aerosol dispenser with explosively driven piston to compress light gas to extremely high pressure
- [NASA-CASE-MFS-20829] c12 N72-21310
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[NASA-CASE-NPO-10109] c03 N71-11049  
Metallic film diffusion for boundary lubrication in aerospace engineering  
[NASA-CASE-XLE-10337] c15 N71-24046  
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[NASA-CASE-XLA-08911] c15 N71-27214
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[NASA-CASE-XLE-01902] c28 N71-10574  
Metallic film diffusion into metal or ceramic surfaces for boundary lubrication in aerospace environments  
[NASA-CASE-XLE-01765] c18 N71-10772  
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[NASA-CASE-XMF-03988] c15 N71-21403  
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[NASA-CASE-XMS-04201] c14 N71-22990  
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[NASA-CASE-XLE-05033] c15 N71-23810  
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[NASA-CASE-XNP-05524] c33 N71-24876  
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[NASA-CASE-NPO-10141] c11 N71-24964  
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[NASA-CASE-LEW-10155-1] c09 N71-29035  
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[NASA-CASE-HSC-14640-1] c54 N76-14804
- AEROSPACE MEDICINE**  
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[NASA-CASE-XMS-01615] c05 N70-41329
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[NASA-CASE-XLA-00142] c02 N70-33286  
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[NASA-CASE-XMF-02853] c31 N70-36654  
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[NASA-CASE-XLA-00805] c31 N70-38010  
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[NASA-CASE-XLA-01027] c31 N71-24035  
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[NASA-CASE-LAB-10539-1] c17 N73-12547
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[NASA-CASE-XMF-02263] c02 N74-10907
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[NASA-CASE-XLA-10450] c28 N71-21493
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[NASA-CASE-XLA-00154] c28 N70-33374
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[NASA-CASE-XNP-01311] c26 N75-29236
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Device for controlling rotary potentiometer mounted on aircraft steering wheel or aileron control  
[NASA-CASE-XAC-10019] c15 N71-23809
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Gas purged dry box glove reducing permeation of air or moisture into dry box or isolator by

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for producing magnetic field in air  
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- Portable apparatus producing high velocity  
annular air column surrounding low velocity,  
filtered, superclean air central core for  
industrial clean room environmental control  
[NASA-CASE-INP-03212] c15 N71-22721
- Air conditioning system and component therefore  
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[NASA-CASE-GSC-11445-1] c15 N74-27902
- AIR COOLING**
- Modification and improvement of turbine blades  
for maximum cooling efficiency  
[NASA-CASE-XLE-00092] c15 N70-33264
- AIR FILTERS**
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separation and characteristics of filter cell  
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[NASA-CASE-XLA-00112] c11 N70-33287
- Photographing surface flow patterns on wind  
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[NASA-CASE-XLA-01353] c14 N70-41366
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turbine during air flow distortion  
[NASA-CASE-LEW-10286-1] c28 N71-28915
- Apparatus and method for generating large mass  
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speeds  
[NASA-CASE-LAR-10612-1] c12 N73-28144
- Air conditioning system and component therefore  
distributing air flow from opposite directions  
[NASA-CASE-GSC-11445-1] c15 N74-27902
- Smoke generator  
[NASA-CASE-ARC-10905-1] c31 N75-33278
- Controlled separation combustor --- airflow  
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[NASA-CASE-LEW-11593-1] c20 N76-14190
- Method and apparatus for fluffing, separating,  
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[NASA-CASE-LAR-11224-1] c37 N76-18456
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- Aeroflexible wing structure with air scoop for  
inflating stiffeners with ram air  
[NASA-CASE-XLA-06095] c01 N69-39981
- Reversed cowl flap inlet thrust augmentor ---  
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[NASA-CASE-ARC-10754-1] c07 N75-24736
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- Spacecraft air lock system to provide ingress  
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vehicular environment to vacuum of space  
[NASA-CASE-XLA-02050] c31 N71-22968
- System for removing and repairing spacecraft  
control thrusters by use of portable air locks  
[NASA-CASE-MPS-20325] c28 N71-27095
- Airlock for waste transfer from pressurized  
enclosure aboard space vehicle to waste  
receiver at negative pressure  
[NASA-CASE-MPS-20922] c31 N72-20840
- Airlock  
[NASA-CASE-MPS-20922-1] c15 N74-22136
- Apparatus for inserting and removing specimens  
from high temperature vacuum furnaces  
[NASA-CASE-LAR-10841-1] c15 N74-27900
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- Analytical photoionization mass spectrometer  
with argon gas filter between light source and  
monochromator  
[NASA-CASE-LAR-10180-1] c06 N71-13461
- Contamination free separation nut eliminating  
combustion products from ambient surroundings  
generated by squib firing  
[NASA-CASE-XGS-01971] c15 N71-15922
- Monitoring atmospheric pollutants with a  
heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c14 N74-11284
- Method for detecting pollutants --- ozone,  
nitrogen dioxide, carbon dioxide  
[NASA-CASE-LAR-11405-1] c35 N75-15938
- Fluorescence detector for monitoring atmospheric  
pollutants  
[NASA-CASE-NPO-13231-1] c45 N75-27585
- Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c45 N76-17656
- Indicator providing continuous indication of the  
presence of a specific pollutant in air  
[NASA-CASE-NPO-13474-1] c45 N76-21742
- AIR PURIFICATION**
- Developing high pressure gas purification and  
filtration system for use in test operations  
of space vehicles  
[NASA-CASE-MPS-12806] c14 N71-17588
- Portable apparatus producing high velocity  
annular air column surrounding low velocity,  
filtered, superclean air central core for  
industrial clean room environmental control  
[NASA-CASE-INP-03212] c15 N71-22721
- AIR SAMPLING**
- Pressure probe for sensing ambient static air  
pressures  
[NASA-CASE-XLA-00481] c14 N70-36824
- Sampler of gas borne particles  
[NASA-CASE-NPO-13396-1] c35 N76-18401
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- Traffic control system for supersonic transports  
using synchronous satellite for data relay  
between vehicles and ground station  
[NASA-CASE-GSC-10087-1] c02 N71-19287
- Satellite aided aircraft collision avoidance  
system effective for large number of aircraft  
[NASA-CASE-ERC-10090] c21 N71-24948
- System and method for position locating for air  
traffic control involving supersonic transports  
[NASA-CASE-GSC-10087-3] c07 N72-12080
- AIRBORNE EQUIPMENT**
- Inflatable radar reflector unit - lightweight,  
highly reflective to electromagnetic  
radiation, and adaptable for erection and  
deployment with minimum effort and time  
[NASA-CASE-XNS-00893] c07 N70-40063
- Charge-coupled device data processor for an  
airborne imaging radar system  
[NASA-CASE-NPO-13587-1] c32 N75-26206
- AIRBORNE/SPACEBORNE COMPUTERS**
- Logic circuit to ripple add and subtract binary  
counters for spaceborne computers  
[NASA-CASE-XGS-04766] c08 N71-18602
- Shared memory for a fault-tolerant computer,  
[NASA-CASE-NPO-13139-1] c60 N76-21914
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- Pilot warning indicator system of intruder  
aircraft  
[NASA-CASE-ERC-10226-1] c14 N73-16483
- AIRCRAFT ACCIDENTS**
- Satellite aided aircraft collision avoidance  
system effective for large number of aircraft  
[NASA-CASE-ERC-10090] c21 N71-24948
- AIRCRAFT APPROACH SPACING**
- Economical satellite aided vehicle avoidance  
system for preventing midair collisions  
[NASA-CASE-ERC-10419] c21 N72-21631
- AIRCRAFT CONFIGURATIONS**
- Variable sweep wing configuration for supersonic  
aircraft  
[NASA-CASE-XLA-00230] c02 N70-33255
- Television simulation for aircraft and space  
flight  
[NASA-CASE-XPR-03107] c09 N71-19449
- Design of dual fuselage aircraft with pivoting  
wing and horizontal stabilizer to permit  
yawing of wing in flight for high speed  
operation  
[NASA-CASE-ARC-10470-1] c02 N73-26005
- Development of aircraft configuration for  
reduction of jet aircraft noise by exhausting  
engine gases over upper surface of wing  
[NASA-CASE-LAR-11087-1] c02 N73-26008
- AIRCRAFT CONTROL**
- Development and characteristics of control  
system for flexible wings  
[NASA-CASE-XLA-06958] c02 N71-11038
- Development of attitude control system for  
vertical takeoff aircraft using reaction  
nozzles displaced from various axes of aircraft  
[NASA-CASE-XAC-08972] c02 N71-20570
- Device for controlling rotary potentiometer  
mounted on aircraft steering wheel or aileron  
control

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[NASA-CASE-XAC-10019] c15 N71-23809  
Direct lift control system having flaps with slots adjacent to their leading edge and particularly adapted for lightweight aircraft  
[NASA-CASE-LAR-10249-1] c02 N71-26110  
Supersonic or hypersonic vehicle control system comprising elevons with hinge line sweep and free of adverse aerodynamic cross coupling  
[NASA-CASE-XLA-08967] c02 N71-27088  
Development of aircraft control system with high performance electrically controlled and mechanically operated hydraulic valves for precise flight operation  
[NASA-CASE-XAC-00048] c02 N71-29128  
Development of thrust control system for application to control of aircraft and spacecraft  
[NASA-CASE-NSC-13397-1] c21 N72-25595  
Aircraft control system for rotary wing aircraft  
[NASA-CASE-ERC-10439] c02 N73-19004  
Situational display system of cathode ray tubes to assist pilot in aircraft control  
[NASA-CASE-ERC-10350] c14 N73-20474  
Development of aerodynamic control system to control flutter over large range of oscillatory frequencies using stability augmentation techniques  
[NASA-CASE-LAR-10682-1] c02 N73-26004  
Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c05 N75-12930  
High lift aircraft --- with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c05 N75-25914  
**AIRCRAFT DESIGN**  
Design of supersonic aircraft with novel fixed, swept wing planform  
[NASA-CASE-XLA-04451] c02 N71-12243  
Design of dual fuselage aircraft with pivoting wing and horizontal stabilizer to permit yawing of wing in flight for high speed operation  
[NASA-CASE-ARC-10470-1] c02 N73-26005  
Multistage aerospace craft --- perspective drawings of conceptual design  
[NASA-CASE-XMP-02263] c02 N74-10907  
High lift aircraft --- with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c05 N75-25914  
Transonic and supersonic aircraft wherein the problems of roll control at high angles of attack are minimized  
[NASA-CASE-LAR-11868-1] c08 N76-19159  
**AIRCRAFT DETECTION**  
Surface based altitude measuring system for accurately measuring altitude of airborne vehicle  
[NASA-CASE-ERC-10412-1] c09 N73-12211  
**AIRCRAFT ENGINES**  
Noise suppressor --- for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c02 N74-32418  
**AIRCRAFT EQUIPMENT**  
Development of radiometric sensor to warn aircraft pilots of region of clear air turbulence along flight path  
[NASA-CASE-ERC-10081] c14 N72-28437  
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[NASA-CASE-LAR-11645-1] c02 N74-26456  
**AIRCRAFT GUIDANCE**  
Terminal guidance system --- for guiding aircraft into preselected altitude and/or heading at terminal point  
[NASA-CASE-PRC-10049-1] c21 N74-13420  
**AIRCRAFT HAZARDS**  
Deflector for preventing objects from entering nacelle inlets of jet aircraft  
[NASA-CASE-XLE-00388] c28 N70-34788  
**AIRCRAFT HYDRAULIC SYSTEMS**  
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[NASA-CASE-LEV-11187-1] c28 N73-19793  
**AIRCRAFT INSTRUMENTS**  
Aircraft instrument for indicating malfunctions during takeoff  
[NASA-CASE-XLA-00100] c14 N70-36807  
Pressure probe for sensing ambient static air pressures  
[NASA-CASE-XLA-00481] c14 N70-36824

Aircraft indicator for pilot control of takeoff roll, climbout path and verticle flight path in poor visibility conditions  
[NASA-CASE-XLA-00487] c14 N70-40157  
Optical projector system for establishing optimum arrangement of instrument displays in aircraft, spacecraft, other vehicles, and industrial instrument consoles  
[NASA-CASE-XNP-03853] c23 N71-21882  
Combined optical attitude and altitude indicating instrument for use in aircraft or spacecraft  
[NASA-CASE-XLA-01907] c14 N71-23268  
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[NASA-CASE-ERC-10392] c21 N73-14692  
G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c35 N75-29381  
Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c04 N76-20114  
**AIRCRAFT LANDING**  
Aerodynamic configuration for aircraft capable of high speed flight and low drag for low speed takeoff or landing upon presently existing airfields  
[NASA-CASE-XLA-00806] c02 N70-34858  
Magnetic method for detection of aircraft position relative to runway  
[NASA-CASE-ARC-10179-1] c21 N72-22619  
Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c05 N75-12930  
**AIRCRAFT LAUNCHING DEVICES**  
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[NASA-CASE-ARC-10979-1] c09 N76-13116  
**AIRCRAFT MANEUVERS**  
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[NASA-CASE-ARC-10806-1] c35 N75-29381  
**AIRCRAFT MODELS**  
Free flight suspension system for use with aircraft models in wind tunnel tests  
[NASA-CASE-XLA-00939] c11 N71-15926  
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[NASA-CASE-XLA-07430] c11 N72-22246  
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[NASA-CASE-LAR-11575-1] c02 N76-16014  
**AIRCRAFT NOISE**  
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[NASA-CASE-LAR-11476-1] c35 N75-27334  
**AIRCRAFT PERFORMANCE**  
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[NASA-CASE-LAR-10574-1] c11 N73-13257  
**AIRCRAFT PILOTS**  
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[NASA-CASE-LAR-10550-1] c11 N74-30597  
**AIRCRAFT SAFETY**  
Aircraft instrument for indicating malfunctions during takeoff  
[NASA-CASE-XLA-00100] c14 N70-36807  
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[NASA-CASE-HQN-10703] c21 N73-13643  
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[NASA-CASE-LAR-10753-1] c02 N74-30421  
**AIRCRAFT STABILITY**  
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[NASA-CASE-XLA-06339] c02 N71-13422  
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[NASA-CASE-LAR-10682-1] c02 N73-26004  
**AIRCRAFT STRUCTURES**  
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[NASA-CASE-XLA-02131] c32 N70-42003  
Heat flux sensor adapted for mounting on aircraft or spacecraft to measure aerodynamic heat flux inflow to aircraft skin  
[NASA-CASE-XPR-03802] c33 N71-23085  
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[NASA-CASE-PRC-10051-1] c14 N74-13129

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- Transparent fire resistant polymeric structures  
[NASA-CASE-ARC-10813-1] c27 N76-16230
- AIRFOIL FENCES**  
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[NASA-CASE-LAR-11669-1] c34 N76-13419
- AIRFOILS**  
Electric analog for measuring induced drag on nonplanar airfoils  
[NASA-CASE-XLA-00755] c01 N71-13410  
Electric analog for measuring induced drag on nonplanar airfoils  
[NASA-CASE-XLA-05828] c01 N71-13411  
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[NASA-CASE-ARC-10470-3] c01 N74-30414  
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[NASA-CASE-LAR-11522-1] c15 N74-34881
- AIRFRAMES**  
Design of dual fuselage aircraft with pivoting wing and horizontal stabilizer to permit yawing of wing in flight for high speed operation  
[NASA-CASE-ARC-10470-1] c02 N73-26005
- AIRSPEED**  
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[NASA-CASE-XLA-00806] c02 N70-34858
- ALCOHOLS**  
New trifunctional alcohol derived from trimer acid and novel method of preparation  
[NASA-CASE-NPO-10714] c06 N69-31244  
Cooling and radiation protection of ruby lasers using copper sulfate solution in alcohol  
[NASA-CASE-MPS-20180] c16 N72-12440
- ALDEHYDES**  
Direct synthesis of polymeric schiff bases from two amines and two aldehydes  
[NASA-CASE-XMP-08655] c06 N71-11239  
Synthesis of azine polymers for heat shields by azine-aromatic aldehyde reaction  
[NASA-CASE-XMP-08656] c06 N71-11242  
Synthesis of aromatic diamines and dialdehyde polymers using Schiff base  
[NASA-CASE-XMP-03074] c06 N71-24740
- ALIGNMENT**  
Centering device with ultrafine adjustment for use with roundness measuring apparatus  
[NASA-CASE-XMP-00480] c14 N70-39898  
Portable device for aligning surfaces of two adjacent wall or sheet sections for joining at point of junction.  
[NASA-CASE-XMP-01452] c15 N70-41371  
Electro-optical/computer system for aligning large structural members and maintaining correct position  
[NASA-CASE-XNP-02029] c14 N70-41955  
Electrical and electromechanical trigonometric computation assembly and space vehicle guidance system for aligning perpendicular axes of two sets of three-axes coordinate references  
[NASA-CASE-XMP-00684] c21 N71-21688  
Description of device for aligning stacked sheets of paper for repetitive cutting  
[NASA-CASE-XMS-04178] c15 N71-22798  
Laser beam projector for continuous, precise alignment between target, laser generator, and astronomical telescope during tracking  
[NASA-CASE-NPO-11087] c23 N71-29125  
Measuring roll alignment of test body with respect to reference body  
[NASA-CASE-GSC-10514-1] c14 N72-20379  
Guide accessories for correctly aligning paper in typewriter to correct typographical errors  
[NASA-CASE-MPS-15218-1] c15 N73-31438  
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[NASA-CASE-ARC-10444-1] c16 N73-33397  
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[NASA-CASE-LAR-11658-1] c37 N76-13494  
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[NASA-CASE-MSC-12559-1] c18 N76-14186
- Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c20 N76-21276
- ALKALI METALS**  
Ultraviolet radiation resistant alkali-metal silicate coatings for temperature control of spacecraft  
[NASA-CASE-XGS-04119] c18 N69-39979  
Analytical test apparatus and method for determining oxygen content in alkali liquid metal  
[NASA-CASE-XLE-01997] c06 N71-23527  
Composition and production method of alkali metal silicate paint with ultraviolet reflection properties  
[NASA-CASE-XGS-04799] c18 N71-24183  
Design and characteristics of heat activated electric cell with anode made from one or more alkali metals and cathode made from oxidizing material  
[NASA-CASE-LEW-11358] c03 N71-26084  
Method for producing alkali metal dispersions of high purity  
[NASA-CASE-XNP-08876] c17 N73-28573
- ALKALINE BATTERIES**  
Method for determining state of charge of alkali batteries by using tritium as tracer  
[NASA-CASE-XNP-01464] c03 N71-10728  
Alkaline-type coulometer cell for primary charge control in secondary battery recharge circuits  
[NASA-CASE-XGS-05434] c03 N71-20491  
Flexible formulated plastic separators for alkaline batteries  
[NASA-CASE-LEW-12363-1] c44 N76-19552
- ALKYL COMPOUNDS**  
Preparation of fluorohydroxy ethers by reacting fluoroalkylene oxides with alkali salt of polyfluoroalkylene diol  
[NASA-CASE-MPS-10507] c06 N73-30101
- ALLOYS**  
Brazing alloy adapted for brazing corrosion resistant steel to refractory metals, also for brazing refractory metals to other refractory metals  
[NASA-CASE-XNP-03063] c17 N71-23365  
Metal alloy bearing materials for space applications  
[NASA-CASE-XLE-05033] c15 N71-23810  
High thermal emittance black surface coatings and process for applying to metal and metal alloy surfaces used in radiative cooling of spacecraft  
[NASA-CASE-XLA-06199] c15 N71-24875  
Adjustable rigid mount for trihedral mirror formed of alloy with small coefficient of thermal expansion supporting screws and spring-biased plates  
[NASA-CASE-XNP-08907] c23 N71-29123  
Two-step diffusion welding process of unrecrystallized alloys  
[NASA-CASE-LEW-11388-1] c15 N73-32358  
Brazing alloy binder  
[NASA-CASE-XMP-05868] c26 N75-27125  
Brazing alloy  
[NASA-CASE-XNP-03878] c26 N75-27127
- ALPHANUMERIC CHARACTERS**  
X-Y alphanumeric character generator for oscilloscopes  
[NASA-CASE-GSC-11582-1] c33 N75-19517
- ALTERNATING CURRENT**  
Characteristics of high power, low distortion, alternating current power amplifier  
[NASA-CASE-LAR-10218-1] c09 N70-34559  
Frequency control network for current feedback oscillators converting dc voltage to ac or higher dc voltages  
[NASA-CASE-GSC-10041-1] c10 N71-19418  
Blood pressure measuring system for separately recording dc and ac pressure signals of Korotkoff sounds  
[NASA-CASE-XMS-06061] c05 N71-23317  
Solid state circuit for switching alternating current input signal as function of direct current gating transistor  
[NASA-CASE-XNP-06505] c10 N71-24799  
Device for voltage conversion using controlled pulse widths and arrangements to generate ac output voltage  
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# ALTITUDE

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- Dc to ac to dc converter with transistor driven synchronous rectifiers
  - [NASA-CASE-GSC-11126-1] c09 N72-25253
- Phase protection system for ac power lines
  - [NASA-CASE-MSC-17832-1] c10 N74-14956
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  - Combined optical attitude and altitude indicating instrument for use in aircraft or spacecraft
    - [NASA-CASE-XLA-01907] c14 N71-23268
- ALTITUDE CONTROL**
  - Ambient atmospheric pressure sensing device for determining altitude of flight vehicles
    - [NASA-CASE-XLA-00128] c15 N70-37925
- ALUMINUM**
  - Joining aluminum to stainless steel by bonding aluminum coatings onto titanium coated stainless steel and brazing aluminum to aluminum/titanium coated steel
    - [NASA-CASE-MFS-07369] c15 N71-20443
  - Low concentration alkaline solution treatment of aluminum with metal phosphate surface coatings to improve chemical bonding and reduce coating weight
    - [NASA-CASE-XLA-01995] c18 N71-23047
  - Etching aluminum alloys with aqueous solution containing sulfuric acid, hydrofluoric acid, and an alkali metal dischromate for adhesive bonding
    - [NASA-CASE-XMF-02303] c17 N71-23828
  - Process for producing dispersion strengthened nickel with aluminum comprising metallic matrices embedded with oxides or other hyperfine compounds
    - [NASA-CASE-XLB-06969] c17 N71-24142
  - Nickel plating onto etched aluminum castings
    - [NASA-CASE-XNP-04148] c17 N71-24830
  - Method of plating copper on aluminum to permit conventional soldering of structural aluminum bodies
    - [NASA-CASE-XLA-08966-1] c17 N71-25903
  - Heat activated emf cells with aluminum anode
    - [NASA-CASE-LEW-11359] c03 N71-28579
  - Heat activated cell with aluminum anode
    - [NASA-CASE-LEW-11359-2] c03 N72-20034
  - Method of preparing graphite reinforced aluminum composite
    - [NASA-CASE-MFS-21077-1] c24 N75-28135
  - Method of fluxless brazing and diffusion bonding of aluminum containing components
    - [NASA-CASE-MSC-14435-1] c37 N76-18455
- ALUMINUM ALLOYS**
  - High strength aluminum casting alloy for cryogenic applications in aerospace engineering
    - [NASA-CASE-XMF-02786] c17 N71-20743
  - Etching aluminum alloys with aqueous solution containing sulfuric acid, hydrofluoric acid, and an alkali metal dischromate for adhesive bonding
    - [NASA-CASE-XMF-02303] c17 N71-23828
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  - Intermetallic chromium containing nickel aluminide for high temperature corrosion protection of stainless steels
    - [NASA-CASE-LEW-11267-1] c17 N73-32414
  - Preparing oxidizer coated metal fuel particles
    - [NASA-CASE-NPO-11975-1] c27 N74-33209
  - Method of protecting the surface of a substrate --- by applying aluminide coating
    - [NASA-CASE-LEW-11696-1] c37 N75-13261
  - Duplex aluminized coatings
    - [NASA-CASE-LEW-11696-2] c26 N75-19408
  - Meteoroid impact position locator aid for manned space station
    - [NASA-CASE-LAR-10629-1] c35 N75-33367
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  - Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide
    - [NASA-CASE-GSC-11577-1] c37 N75-15992
- ALUMINUM SILICATES**
  - White paint production by heating impure aluminum silicate clay having low solar absorptance
    - [NASA-CASE-XNP-02139] c18 N71-24184
- AMINES**
  - Direct synthesis of polymeric schiff bases from two amines and two aldehydes
    - [NASA-CASE-XMF-08655] c06 N71-11239
  - Synthesis of schiff bases for heat shields by acetal amine reactions
    - [NASA-CASE-XMF-08652] c06 N71-11243
  - Polyimide foam for the thermal insulation and fire protection
    - [NASA-CASE-ARC-10464-1] c06 N74-12812
  - Automated analysis of oxidative metabolites
    - [NASA-CASE-ARC-10469-1] c25 N75-12086
- AMINO ACIDS**
  - Amino acid analysis
    - [NASA-CASE-NPO-12130-1] c25 N75-14844
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  - Solid state chemical source for ammonia beam masers
    - [NASA-CASE-XGS-01504] c16 N70-41578
  - Low to high temperature energy conversion system --- using ammonia
    - [NASA-CASE-NPO-13510-1] c44 N75-16972
- AMMONIUM PERCHLORATES**
  - Ammonium perchlorate composite propellant with organic Cu/II/ chelate catalytic additive
    - [NASA-CASE-LAR-10173-1] c27 N71-14090
- AMPLIFICATION**
  - Automatic measuring and recording of gain and zero drift characteristics of electronic amplifier
    - [NASA-CASE-XMS-05562-1] c09 N69-39986
  - Clamped amplifier circuit for horizon scanner enabling amplification and accurate measurement of specified parameters
    - [NASA-CASE-XGS-01784] c10 N71-20782
  - Diversity receiving system with diversity phase lock
    - [NASA-CASE-XGS-01222] c10 N71-20841
  - Design of active RC network capable of operating at high Q values with reduced sensitivity to gain amplification and number of passive components
    - [NASA-CASE-ARC-10042-2] c10 N72-11256
  - Amplifying circuit with constant current source for accumulator load and high gain voltage amplification
    - [NASA-CASE-NPO-11023] c09 N72-17155
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    - [NASA-CASE-XMS-05307] c09 N69-24330
  - Bio-isolated dc operational amplifier --- for bioelectric measurements
    - [NASA-CASE-ARC-10596-1] c09 N74-21851
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  - Development of stable electronic amplifier adaptable for monolithic and thin film construction
    - [NASA-CASE-XGS-02812] c09 N71-19466
  - Ear oximeter for monitoring blood oxygenation and pressure, pulse rate, and pressure pulse curve, using dc and ac amplifiers
    - [NASA-CASE-XAC-05422] c04 N71-23185
  - Comb type traveling wave maser amplifier for improved high gain broadband output
    - [NASA-CASE-NPO-10548] c16 N71-24831
  - Vibrophonocardiograph comprising low weight and small volume piezoelectric microphone with amplifier having high input impedance for high sensitivity and low frequency response
    - [NASA-CASE-XPR-07172] c05 N71-27234
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    - [NASA-CASE-XNP-01068] c10 N71-28739
  - Active RC filter networks and amplifiers for deep space magnetic field measurement
    - [NASA-CASE-XAC-05462-2] c10 N72-17171
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    - [NASA-CASE-FRC-10072-1] c09 N74-14939
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    - [NASA-CASE-LAR-11213-1] c35 N75-15014
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    - [NASA-CASE-NPO-13490-1] c36 N75-16827
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- [NASA-CASE-XNP-00477] c08 N73-28045  
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[NASA-CASE-XNP-05612] c09 N69-21468  
Development of demodulation system for removing amplitude modulation from two quadrature displaced data bearing signals  
[NASA-CASE-XAC-04030] c10 N71-19472  
Development of apparatus for amplitude modulation of diode laser by periodic discharge of direct current power supply  
[NASA-CASE-XMS-04269] c16 N71-22895  
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[NASA-CASE-XAC-02807] c09 N71-23021  
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[NASA-CASE-NPO-10302] c10 N71-26142  
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[NASA-CASE-GSC-10668-1] c07 N71-28430  
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[NASA-CASE-NPO-11820-1] c07 N74-19788  
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[NASA-CASE-GSC-11446-1] c09 N74-20860  
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[NASA-CASE-NPO-11945-1] c36 N76-18427  
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[NASA-CASE-NPO-10169] c10 N71-24844  
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[NASA-CASE-XMF-01097] c10 N71-16058  
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[NASA-CASE-MFS-13046] c07 N71-19433  
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[NASA-CASE-XPR-05637] c09 N71-19480  
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[NASA-CASE-GSC-10880-1] c08 N72-11172  
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[NASA-CASE-NPO-10068] c08 N71-19288  
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[NASA-CASE-XGS-02612] c08 N71-19435  
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[NASA-CASE-GSC-11877-1] c74 N76-18913  
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[NASA-CASE-XAC-00404] c08 N70-40125  
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[NASA-CASE-XLA-00670] c08 N71-12501  
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[NASA-CASE-XAC-04031] c08 N71-18594  
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- [NASA-CASE-LEW-10345-1] c10 N71-25899  
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[NASA-CASE-NPO-10344] c10 N71-26544  
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[NASA-CASE-XLA-06713] c14 N71-28991  
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[NASA-CASE-MSC-13110-1] c08 N72-22163  
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[NASA-CASE-NPO-11016] c08 N72-31226  
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[NASA-CASE-XNP-09451] c06 N71-26754  
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[NASA-CASE-XMS-12158-1] c31 N69-27499  
Unitary three-axis controller for flight  
vehicles within or outside atmosphere  
[NASA-CASE-XPR-00181] c21 N70-33279  
Sensing method and device for determining  
orientation of space vehicle or satellite by  
using particle traps  
[NASA-CASE-XGS-00466] c21 N70-34297  
Attitude and propellant flow control system for  
liquid propellant rocket vehicles  
[NASA-CASE-XMP-00185] c21 N70-34539  
Spacecraft attitude control system using solar  
and earth sensors, gyroscopes, and jet actuators  
[NASA-CASE-XNP-00465] c21 N70-35395  
Attitude control device for space vehicles  
[NASA-CASE-XNP-00294] c21 N70-36938  
Attitude orientation control of spin stabilized  
final stage space vehicles, using horizon  
scanners  
[NASA-CASE-XLA-00281] c21 N70-36943  
Automatic ejection valve for attitude control  
and midcourse guidance of space vehicles  
[NASA-CASE-XNP-00676] c15 N70-38996  
Three-axis controller operated by hand-wrist  
motion for yaw, pitch, and roll control  
[NASA-CASE-XAC-01404] c05 N70-41581  
Attitude control training device for astronauts  
permitting friction-free movement with five  
degrees of freedom  
[NASA-CASE-XMS-02977] c11 N71-10746  
Photomultiplier detector of Canopus for  
spacecraft attitude control  
[NASA-CASE-XNP-03914] c21 N71-10771  
Automatic balancing device for use on  
frictionless supported attitude-controlled  
test platforms  
[NASA-CASE-LAR-10774] c10 N71-13545  
Development of spacecraft experiment pointing  
and attitude control system  
[NASA-CASE-XLA-05464] c21 N71-14132  
Development of attitude control system for  
spacecraft orientation  
[NASA-CASE-XGS-04393] c21 N71-14159

System for aerodynamic control of rocket  
vehicles by secondary injection of fluid into  
nozzle exhaust stream  
[NASA-CASE-XLA-01163] c21 N71-15582  
Drive mechanism for operating reactance attitude  
control system for aerospace bodies  
[NASA-CASE-XMP-01598] c21 N71-15583  
Attitude detection system using stellar  
references for three-axis control and spin  
stabilized spacecraft  
[NASA-CASE-XGS-03431] c21 N71-15642  
Remote control device operated by movement of  
finger tips for manual control of spacecraft  
attitude  
[NASA-CASE-XAC-02405] c09 N71-16089  
Thrust and attitude control apparatus using jet  
nozzle in movable canard surface or fin  
configuration  
[NASA-CASE-XLE-03583] c31 N71-17629  
Attitude sensor with scanning mirrors for  
detecting orientation of space vehicle with  
respect to planet  
[NASA-CASE-XLA-00793] c21 N71-22880  
Development of attitude control system for  
sounding rocket stabilization during ballistic  
phase of flight  
[NASA-CASE-XGS-01654] c31 N71-24750  
Development of voice operated controller for  
controlling reaction jets of spacecraft  
[NASA-CASE-XLA-04063] c31 N71-33160  
Attitude sensor  
[NASA-CASE-LAR-10586-1] c14 N74-15089  
Temperature compensated digital inertial sensor  
--- circuit for maintaining inertial element  
of gyroscope or accelerometer at constant  
position  
[NASA-CASE-NPO-13044-1] c14 N74-15094  
Sun direction detection system --- for use in  
controlling the attitude of a vehicle  
[NASA-CASE-NPO-13722-1] c19 N75-33169

**ATTITUDE GYROS**  
Spacecraft attitude control system using solar  
and earth sensors, gyroscopes, and jet actuators  
[NASA-CASE-XNP-00465] c21 N70-35395  
An attitude control system  
[NASA-CASE-MFS-22787-1] c21 N74-35096

**ATTITUDE INDICATORS**  
Photosensitive light source device for detecting  
unmanned spacecraft deviation from reference  
attitude  
[NASA-CASE-XNP-00438] c21 N70-35089  
Hand controller operable about three  
respectively perpendicular axes and capable of  
actuating signal generators for attitude  
control devices  
[NASA-CASE-XMS-07487] c15 N71-23255  
Combined optical attitude and altitude  
indicating instrument for use in aircraft or  
spacecraft  
[NASA-CASE-XLA-01907] c14 N71-23268  
Aircraft horizon and vertical indicator  
[NASA-CASE-ERC-10392] c21 N73-14692  
Attitude sensor  
[NASA-CASE-LAR-10586-1] c14 N74-15089

**ATTITUDE STABILITY**  
Dynamic precession damping of spin-stabilized  
vehicles by using rate gyroscope and angular  
accelerometer  
[NASA-CASE-XLA-01989] c21 N70-34295  
Attitude stabilizer for nonguided missile or  
vehicle with respect to trajectory  
[NASA-CASE-ARC-10134] c30 N72-17873  
Strapped down gyroscope aligned with sun and  
star tracker optical axis calibrating roll,  
yaw and pitch values  
[NASA-CASE-ARC-10716-1] c31 N73-32784

**AUDIO EQUIPMENT**  
Audio equipment for removing impulse noise from  
audio signals  
[NASA-CASE-NPO-11631] c10 N73-12244

**AUDIO FREQUENCIES**  
High efficiency transformerless amplitude  
modulator coupled to RF power amplifier  
[NASA-CASE-GSC-10668-1] c07 N71-28430  
Audio frequency analysis circuit for  
determining, displaying, and recording  
frequency of sweeping audio frequency signal  
[NASA-CASE-NPO-11147] c14 N72-27408

# AUDITORY PERCEPTION

# SUBJECT INDEX

## AUDITORY PERCEPTION

Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c14 N74-21014

**AUDITORY SIGNALS**  
Audio signal processing system for noise surge elimination at low amplitude audio input  
[NASA-CASE-MSC-12223-1] c07 N71-26181  
Audio equipment for removing impulse noise from audio signals  
[NASA-CASE-NPO-11631] c10 N73-12244

**AUDITORY STIMULI**  
Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c14 N74-21014

**AUSTENITIC STAINLESS STEELS**  
Intermetallic chromium containing nickel aluminide for high temperature corrosion protection of stainless steels  
[NASA-CASE-LEW-11267-1] c17 N73-32414  
Device for measuring the ferrite content in an austenitic stainless-steel weld  
[NASA-CASE-MFS-22907-1] c26 N76-18257

**AUTOCORRELATION**  
Linear three-tap feedback shift register  
[NASA-CASE-NPO-10351] c08 N71-12503  
Circuitry for developing autocorrelation function continuously within signal receiving period  
[NASA-CASE-XNP-00746] c07 N71-21476

**AUTOMATIC CONTROL**  
Automatic control of voltage supply to direct current motor  
[NASA-CASE-XMS-04215-1] c09 N69-39987  
Electro-optical/computer system for aligning large structural members and maintaining correct position  
[NASA-CASE-XNP-02029] c14 N70-41955  
Pulsed energy power system for application of combustible gases to turbine controlling ac voltage generator  
[NASA-CASE-MSC-13112] c03 N71-11057  
Automatic balancing device for use on frictionless supported attitude-controlled test platforms  
[NASA-CASE-LAR-10774] c10 N71-13545  
Computer controlled apparatus for maintaining welding torch angle and velocity during seam tracking  
[NASA-CASE-XMF-03287] c15 N71-15607  
Fluid leakage detection system with automatic monitoring capability  
[NASA-CASE-LAR-10323-1] c12 N71-17573  
Light sensitive control system for automatically opening and closing dome of solar optical telescope  
[NASA-CASE-MSC-10966] c14 N71-19568  
Welding torch with automatic speed controller using speed sensing wheel and closed servo system  
[NASA-CASE-XMP-01730] c15 N71-23050  
Microwave waveguide switch with rotor position control  
[NASA-CASE-XNP-06507] c09 N71-23548  
Automatically reciprocating, high pressure pump for use in spacecraft cryogenic propellants  
[NASA-CASE-XNP-04731] c15 N71-24042  
Automatic controlled thermal fatigue testing apparatus  
[NASA-CASE-XLA-02059] c33 N71-24276  
Automatically charging battery of electric storage cells  
[NASA-CASE-XNP-04758] c03 N71-24605  
Electric motor control system with pulse width modulation for providing automatic null seeking servo  
[NASA-CASE-XMF-05195] c10 N71-24861  
Indexing mechanism for cathode array substitution in electron beam tube  
[NASA-CASE-NPO-10625] c09 N71-26182  
Voltage range selection apparatus for sensing and applying voltages to electronic instruments without loading signal source  
[NASA-CASE-XMS-06497] c14 N71-26244  
Automated fluid chemical analyzer for microchemical analysis of small quantities of liquids by use of selected reagents and analyzer units  
[NASA-CASE-XNP-09451] c06 N71-26754  
Automatic control device for regulating inlet water temperature of liquid cooled spacesuit

[NASA-CASE-MSC-13917-1] c05 N72-15098  
Optimal control system for automatic speed regulation of electric driven motor vehicle  
[NASA-CASE-NPO-11210] c11 N72-20244  
Plotter device for automatically drawing equipotential lines on sheet of resistance paper  
[NASA-CASE-NPO-11134] c09 N72-21246  
Automatic shunting of ion thruster magnetic field when thruster is not operating  
[NASA-CASE-LEW-10835-1] c28 N72-22771  
Automatic temperature control for liquid cooled space suit  
[NASA-CASE-ARC-10599-1] c05 N73-26071  
Speed control system for dc motor equipped with brushless Hall effect device  
[NASA-CASE-MFS-20207-1] c09 N73-32107  
Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c05 N74-22771  
Automatically operable self-leveling load table  
[NASA-CASE-MFS-22039-1] c09 N75-12968  
Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c35 N75-15014  
Automatic fluid dispenser  
[NASA-CASE-ARC-10820-1] c54 N75-32766  
Traffic survey system --- using optical scanners  
[NASA-CASE-MFS-22631-1] c66 N76-19888

**AUTOMATIC CONTROL VALVES**  
Ambient atmospheric pressure sensing device for determining altitude of flight vehicles  
[NASA-CASE-XLA-00128] c15 N70-37925  
Describing metal valve pintle with encapsulated elastomeric body  
[NASA-CASE-MSC-12116-1] c15 N71-17648  
Semitoroidal diaphragm cavitating flow control valve  
[NASA-CASE-XNP-09704] c12 N71-18615  
Reliability of automatic refilling valving device for cryogenic liquid systems  
[NASA-CASE-NPO-11177] c15 N72-17453  
Combined pressure regulator and shutoff valve  
[NASA-CASE-NPO-13201-1] c37 N75-15050

**AUTOMATIC FREQUENCY CONTROL**  
System for phase locking onto carrier frequency signal located within receiver bandpass  
[NASA-CASE-XGS-04994] c09 N69-21543  
Audio signal processing system for noise surge elimination at low amplitude audio input  
[NASA-CASE-MSC-12223-1] c07 N71-26181  
Automatic frequency control device for providing frequency reference for voltage controlled oscillator  
[NASA-CASE-KSC-10393] c09 N72-21247  
Self-tuning electronic filter for maintaining constant bandwidth and center frequency gain  
[NASA-CASE-ARC-10264-1] c09 N73-20231

**AUTOMATIC GAIN CONTROL**  
Automatic gain control amplifier system  
[NASA-CASE-XMS-05307] c09 N69-24330  
Automatic measuring and recording of gain and zero drift characteristics of electronic amplifier  
[NASA-CASE-XMS-05562-1] c09 N69-39986  
Self-tuning electronic filter for maintaining constant bandwidth and center frequency gain  
[NASA-CASE-ARC-10264-1] c09 N73-20231

**AUTOMATIC TEST EQUIPMENT**  
Automated visual sensitivity tester for determining visual field sensitivity and blind spot size  
[NASA-CASE-ARC-10329-1] c05 N73-26072  
Automatic microbial transfer device  
[NASA-CASE-LAR-11354-1] c35 N75-27330

**AXES (REFERENCE LINES)**  
Test fixture for measuring moment of inertia of irregularly shaped body with multiple axes  
[NASA-CASE-XGS-01023] c14 N71-22992  
Mechanism for restraining universal joints to prevent separation while allowing bending, angulation, and lateral offset in any position about axis  
[NASA-CASE-XNP-02278] c15 N71-28951

**AXES OF ROTATION**  
Unitary three-axis controller for flight vehicles within or outside atmosphere  
[NASA-CASE-XPR-00181] c21 N70-33279  
Proportional controller for regulating aircraft or spacecraft motion about three axes  
[NASA-CASE-XAC-03392] c03 N70-41954

- Electrical and electromechanical trigonometric computation assembly and space vehicle guidance system for aligning perpendicular axes of two sets of three-axes coordinate references  
[NASA-CASE-XMF-00684] c21 N71-21688
- Hand controller operable about three respectively perpendicular axes and capable of actuating signal generators for attitude control devices  
[NASA-CASE-XMS-07487] c15 N71-23255
- AXIAL COMPRESSION LOADS**  
Development and characteristics of device for indicating and recording magnitude of force applied in axial direction  
[NASA-CASE-MSC-15626-1] c14 N72-25411
- AXIAL FLOW TURBINES**  
Multistage multiple reentry axial flow reaction turbine with reverse flow reentry ducting  
[NASA-CASE-XLE-00170] c15 N70-36412
- Multistage, multiple reentry, single rotor, axial-flow turbine  
[NASA-CASE-XLE-00085] c28 N70-39895
- AXIAL LOADS**  
Ball locking device which releases in response to small forces when subjected to high axial loads  
[NASA-CASE-XMF-01371] c15 N70-41829
- AXIAL STRAIN**  
Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648] c35 N76-16396
- AXIAL STRESS**  
Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c37 N76-18459
- AZIMUTH**  
Tracking mount for laser telescope employed in tracking large rockets and space vehicles to give information regarding azimuth and elevation  
[NASA-CASE-MFS-14017] c14 N71-26627
- Long range laser traversing system  
[NASA-CASE-GSC-11262-1] c16 N74-21091
- AZINES**  
Synthesis of azine polymers for heat shields by azine-aromatic aldehyde reaction  
[NASA-CASE-XMF-08656] c06 N71-11242
- Ultraviolet and thermally stable polymer compositions --- poly((diarylsiloxy)arylazines)  
[NASA-CASE-ARC-10592-2] c06 N74-11926
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c18 N74-21156
- AZO COMPOUNDS**  
Molding process for inidazopyrrolone polymers  
[NASA-CASE-LAR-10547-1] c15 N74-13177
- B**
- BACKGROUND NOISE**  
Electronic background suppression field scanning sensor for detecting point source targets  
[NASA-CASE-XGS-05211] c07 N69-39980
- BACKSCATTERING**  
Apparatus for measuring backscatter and transmission characteristics of sample segment of large spherical passive satellites  
[NASA-CASE-XGS-02608] c07 N70-41678
- Mossbauer spectrometer radiation detector  
[NASA-CASE-LAR-11155-1] c14 N74-15091
- BACKUPS**  
Flexible backup bar for welding awkwardly shaped structures  
[NASA-CASE-XMF-00722] c15 N70-40204
- Reliable electrical element heater using plural wire system and backup power sources  
[NASA-CASE-MFS-21462-1] c09 N74-14935
- BACTERIA**  
Decontamination of petroleum products with honey  
[NASA-CASE-XNP-03835] c06 N71-23499
- Portable tester for monitoring bacterial contamination by adenosine triphosphate light reaction  
[NASA-CASE-GSC-10879-1] c14 N72-25413
- Enzymatic luminescent bioassay method for determining bacterial levels in urine  
[NASA-CASE-GSC-11092-2] c04 N73-27052
- Lyophilized spore dispenser  
[NASA-CASE-LAR-10544-1] c15 N74-13178
- Improved method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c51 N75-21921
- Automated single-slide staining device  
[NASA-CASE-LAR-11649-1] c51 N76-13725
- BACTERIOLOGY**  
Detection of bacteria in biological fluids and foods  
[NASA-CASE-GSC-11533-1] c14 N73-13435
- Application of luciferase assay for ATP to antimicrobial drug susceptibility testing  
[NASA-CASE-GSC-12039-1] c51 N75-26629
- BAFFLES**  
Light radiation direction indicator with baffle of two parallel grids  
[NASA-CASE-XNP-03930] c14 N69-24331
- Light baffle with oblate hemispheroid surface and shading flange  
[NASA-CASE-NPO-10337] c14 N71-15604
- Flexible ring slosh damping baffle for spacecraft fuel tank  
[NASA-CASE-LAR-10317-1] c32 N71-16103
- Submerged fuel tank baffles to prevent sloshing in liquid propellant rocket flight  
[NASA-CASE-XLA-04605] c32 N71-16106
- Floating baffle for tank drain  
[NASA-CASE-KSC-10639] c15 N73-26472
- BAGS**  
Pecal waste disposal container  
[NASA-CASE-XMS-06761] c05 N69-23192
- BALANCE**  
Thermoprotective device for balances  
[NASA-CASE-XAC-00648] c14 N70-40400
- Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c14 N74-26945
- BALANCING**  
Automatic balancing device for use on frictionless supported attitude-controlled test platforms  
[NASA-CASE-LAR-10774] c10 N71-13545
- Force balanced throttle valve for fuel control in rocket engines  
[NASA-CASE-NPO-10808] c15 N71-27432
- Static force balancing system attached to lifting body  
[NASA-CASE-LAR-10348-1] c11 N73-12264
- BALL BEARINGS**  
Combination guide and rotary bearing for freely moving shaft  
[NASA-CASE-XLA-00013] c15 N71-29136
- Method for reducing mass of ball bearings for long life operation at high speed  
[NASA-CASE-LEW-10856-1] c15 N72-22490
- Low mass rolling element bearing assembly  
[NASA-CASE-LEW-11087-1] c15 N73-30458
- Hollow rolling element bearings  
[NASA-CASE-LEW-11087-3] c15 N74-21064
- Drilled ball bearing with a one piece anti-tipping cage assembly  
[NASA-CASE-LEW-11925-1] c37 N75-31446
- BALLAST (MASS)**  
Inflatable stabilizing system for use on life raft to reduce rocking and preclude capsizing  
[NASA-CASE-MSC-12393-1] c02 N73-26006
- BALLASTS (IMPEDANCES)**  
Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c09 N69-24318
- BALLISTICS**  
Fiber modified polyurethane foam for ballistic protection  
[NASA-CASE-ARC-10714-1] c27 N76-15310
- BALLOON SOUNDING**  
Apparatus for controlling the temperature of balloon-borne equipment  
[NASA-CASE-GSC-11620-1] c14 N74-23039
- BALLOONS**  
Development and characteristics of hot air balloon deceleration and recovery system  
[NASA-CASE-XLA-06824-2] c02 N71-11037
- Inflation system for balloon type satellites  
[NASA-CASE-XGS-03351] c31 N71-16081
- System for controlling torque buildup in suspension of gondola connected to balloon by parachute shroud lines  
[NASA-CASE-GSC-11077-1] c02 N73-13008
- BALLS**  
Two axis flight controller with potentiometer control shafts directly coupled to rotatable ball members  
[NASA-CASE-XPR-04104] c03 N70-42073



## BANDPASS FILTERS

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## BANDPASS FILTERS

Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c07 N69-24323

Phase locked demodulator with bandwidth  
switching amplifier circuit  
[NASA-CASE-XNP-01107] c10 N71-28859

Signal to noise ratio determination circuit  
using bandpass limiter  
[NASA-CASE-GSC-11239-1] c10 N73-25241

Selective bandpass resonators using bandstop  
resonator pairs for microwave frequency  
operation  
[NASA-CASE-GSC-10990-1] c09 N73-26195

Dichroic plate --- as bandpass filters  
[NASA-CASE-NPO-13506-1] c35 N76-15435

**BANDWIDTH**

Improvements in receiver of narrow bandwidth  
television system  
[NASA-CASE-XMS-06740-1] c07 N71-26579

Self-tuning electronic filter for maintaining  
constant bandwidth and center frequency gain  
[NASA-CASE-ARC-10264-1] c09 N73-20231

Turnstile and flared cone UHF antenna  
[NASA-CASE-LAR-10970-1] c33 N76-14372

**BARIUM**

Chemical system for releasing barium to create  
ion clouds in upper atmosphere and  
interplanetary space  
[NASA-CASE-LAR-10670-1] c06 N73-30097

**BARIUM COMPOUNDS**

Improved cathode containing barium carbonate  
block and heated tungsten screen for electron  
bombardment ion thruster  
[NASA-CASE-XLE-07087] c06 N69-39889

**BARIUM FLUORIDES**

Production of barium fluoride-calcium fluoride  
composite lubricant for bearings or seals  
[NASA-CASE-XLE-08511-2] c18 N71-16105

**BARIUM ION CLOUDS**

Rocket having barium release system to create  
ion clouds in the upper atmosphere  
[NASA-CASE-LAR-10670-2] c31 N74-27360

**BARIUM TITANATES**

Memory device employing semiconductor and  
ferroelectric properties of single crystal  
barium titanate  
[NASA-CASE-ERC-10307] c08 N72-21198

**BARRIER LAYERS**

High voltage, high current Schottky barrier  
solar cell  
[NASA-CASE-NPO-13482-1] c03 N74-30448

**BARRIERS**

Short range laser obstacle detector --- for  
surface vehicles using laser diode array  
[NASA-CASE-NPO-11856-1] c16 N74-15145

**BASES (CHEMICAL)**

Low concentration alkaline solution treatment of  
aluminum with metal phosphate surface coatings  
to improve chemical bonding and reduce coating  
weight  
[NASA-CASE-XLA-01995] c18 N71-23047

**BATTERY CHARGERS**

Battery charging system with cell to cell  
voltage balance  
[NASA-CASE-XGS-05432] c03 N71-19438

Alkaline-type coulometer cell for primary charge  
control in secondary battery recharge circuits  
[NASA-CASE-IGS-05434] c03 N71-20491

Development and characteristics of battery  
charging circuits with coulometer for control  
of available current  
[NASA-CASE-GSC-10487-1] c03 N71-24719

**BAYARD-ALPERT IONIZATION GAGES**

Describing hot filament type Bayard-Alpert  
ionization gage with ion collector buried or  
removed from grid structure  
[NASA-CASE-XLA-07424] c14 N71-18482

**BEADS**

Rotary bead dropper and selector for testing  
micrometeorite transducers  
[NASA-CASE-XGS-03304] c09 N71-22988

**BEAM LEADS**

Integrated circuit package with lead structure  
and method of preparing the same  
[NASA-CASE-MPS-21374-1] c10 N74-12951

**BEAM SPLITTERS**

Optical range finder using reflective first  
surfaces mirror and transmitting beam splitter  
[NASA-CASE-MSC-12105-1] c14 N72-21409

Method and apparatus for splitting a beam of  
energy  
[NASA-CASE-GSC-12083-1] c36 N76-15451

**BEAM SWITCHING**

Using electron beam switching for brushless  
motor commutation  
[NASA-CASE-XGS-01451] c09 N71-10677

Antenna array at focal plane of reflector with  
coupling network for beam switching  
[NASA-CASE-GSC-10220-1] c07 N71-27233

Dish antenna having switchable beamwidth ---  
with truncated concave ellipsoid subreflector  
[NASA-CASE-GSC-11760-1] c33 N75-19516

Switchable beamwidth monopulse method and system  
[NASA-CASE-GSC-11924-1] c33 N75-26252

Single frequency, two feed dish antenna having  
switchable beamwidth  
[NASA-CASE-GSC-11968-1] c32 N76-15329

**BEAM WAVEGUIDES**

Laser machining device with dielectric  
functioning as beam waveguide for mechanical  
and medical applications  
[NASA-CASE-HQN-10541-2] c15 N71-27135

Optical communication system with gas filled  
waveguide for laser beam transmission  
[NASA-CASE-HQN-10541-4] c16 N71-27183

Laser beam projector for continuous, precise  
alignment between target, laser generator, and  
astronomical telescope during tracking  
[NASA-CASE-NPO-11087] c23 N71-29125

**BEAMS (RADIATION)**

Method and means for recording and  
reconstructing holograms without use of  
reference beam  
[NASA-CASE-ERC-10020] c16 N71-26154

Method and system for transmitting and  
distributing optical frequency radiation  
[NASA-CASE-HQN-10541-3] c23 N72-23695

**BEARING (DIRECTION)**

Light radiation direction indicator with baffle  
of two parallel grids  
[NASA-CASE-XNP-03930] c14 N69-24331

Solar radiation direction detector and device  
for compensating degradation of photocells  
[NASA-CASE-XLA-00183] c14 N70-40239

Michelson interferometer with photodetector for  
optical direction sensing  
[NASA-CASE-NPO-10320] c14 N71-17655

Omnidirectional liquid filled accelerometer  
design with liquid and housing temperature  
compensation  
[NASA-CASE-HQN-10780] c14 N71-30265

**BEARINGS**

Metal alloy bearing materials for space  
applications  
[NASA-CASE-XLE-05033] c15 N71-23810

Low friction bearing and lock mechanism for  
two-axis gimbal carrying satellite payload  
[NASA-CASE-GSC-10556-1] c31 N71-26537

Measuring device for bearing preload using  
spring washers  
[NASA-CASE-MPS-20434] c11 N72-25288

Magnetic bearing --- for supplying magnetic fluxes  
[NASA-CASE-GSC-11079-1] c37 N75-18574

Magnetic bearing system  
[NASA-CASE-GSC-11978-1] c37 N75-27386

**BEDS (PROCESS ENGINEERING)**

Catalyst bed element removing tool  
[NASA-CASE-XPR-00811] c15 N70-36901

**BEER LAW**

Multichannel photoionization chamber for  
measuring absorption, photoionization yield,  
and coefficients of gases  
[NASA-CASE-ERC-10044-1] c14 N71-27090

**BEES**

Decontamination of petroleum products with honey  
[NASA-CASE-INP-03835] c06 N71-23499

**BELLOWS**

Compact bellows spirometer for high speed and  
high altitude space travel  
[NASA-CASE-XAR-01547] c05 N69-21473

Electrical connection for printed circuits on  
common board, using bellows principle in rivet  
[NASA-CASE-XNP-05082] c15 N70-41960

Flexible bellows joint shielding sleeve for  
propellant transfer pipelines  
[NASA-CASE-XNP-01855] c15 N71-28937

Internally supported flexible duct joint ---  
device for conducting fluids in high pressure

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Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c15 N74-32917
- BENDING**  
Method and apparatus for bowing of instrument panels to improve radio frequency shielded enclosure  
[NASA-CASE-XMP-09422] c07 N71-19436  
Development of systems for automatically and continually suppressing or attenuating bending motion in elastic bodies  
[NASA-CASE-XAC-05632] c32 N71-23971  
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[NASA-CASE-XNP-10475] c15 N71-24679  
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- BENDING DIAGRAMS**  
Charged particle analyzer with periodically varying voltage applied across electrostatic deflection members  
[NASA-CASE-XAC-05506-1] c24 N71-16095
- BENDING FATIGUE**  
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[NASA-CASE-XLE-01300] c15 N70-41993  
Cryostat for flexure fatigue testing of composite materials  
[NASA-CASE-XMP-02964] c14 N71-17659
- BENDING MOMENTS**  
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- BERYLLIUM OXIDES**  
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- BIMETALS**  
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[NASA-CASE-MPS-20433] c15 N72-28496  
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[NASA-CASE-ARC-10441-1] c15 N74-15126
- BINARY CODES**  
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[NASA-CASE-GSC-10373-1] c07 N71-19773  
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[NASA-CASE-XNP-04623] c10 N71-26103  
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[NASA-CASE-XGS-00174] c08 N70-34743  
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[NASA-CASE-XGS-04766] c08 N71-18602  
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[NASA-CASE-XGS-04765] c08 N71-18693  
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[NASA-CASE-NPO-10851] c07 N71-24613  
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[NASA-CASE-GSC-11743-1] c32 N75-24981  
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[NASA-CASE-GSC-12017-1] c32 N76-16302
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[NASA-CASE-XLA-00471] c08 N70-34778  
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[NASA-CASE-XGS-00689] c08 N70-34787  
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[NASA-CASE-NPO-10112] c08 N71-12502  
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[NASA-CASE-XNP-05415] c08 N71-12505  
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[NASA-CASE-XGS-04987] c08 N71-20571  
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[NASA-CASE-XNP-04819] c08 N71-23295  
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[NASA-CASE-KSC-10595] c08 N73-12176  
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[NASA-CASE-MSC-14082-1] c08 N73-16163  
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[NASA-CASE-XNP-00432] c08 N70-35423  
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[NASA-CASE-XGS-01230] c08 N71-19544  
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[NASA-CASE-XKS-06167] c08 N71-24890  
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[NASA-CASE-KSC-10326] c08 N72-21197  
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[NASA-CASE-GSC-12044-1] c60 N76-13781
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[NASA-CASE-XMS-00259] c18 N70-36400  
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[NASA-CASE-XMP-05868] c26 N75-27125
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[NASA-CASE-LAR-11782-1] c35 N75-30516
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## BIOELECTRIC POTENTIAL

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 [NASA-CASE-GSC-10565-1] c06 N72-25149  
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 [NASA-CASE-GSC-11092-2] c04 N73-27052  
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 [NASA-CASE-NPO-12130-1] c25 N75-14844  
 Improved method of detecting and counting bacteria  
 [NASA-CASE-GSC-11917-2] c51 N75-21921  
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 [NASA-CASE-NPO-13214-1] c35 N75-25123
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 chloride electrode for detecting bioelectric  
 potential differences generated by human  
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 [NASA-CASE-XMS-02872] c05 N69-21925  
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 resistant-stress resistant biopotential  
 electrode  
 [NASA-CASE-HSC-90153-2] c05 N72-25120
- BIOELECTRICITY**  
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 which poisoning by organic molecules is  
 prevented by ion selective electrolytic  
 deposition of hydrophilic protein colloid  
 [NASA-CASE-XMS-04213-1] c09 N71-26002
- BIOENGINEERING**  
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 bioelectric measurements  
 [NASA-CASE-ARC-10596-1] c09 N74-21851
- BIOINSTRUMENTATION**  
 Temperature compensated solid state differential  
 amplifier with application in  
 bioinstrumentation circuits  
 [NASA-CASE-XAC-00435] c09 N70-35440  
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 level signals from skin of living creatures  
 [NASA-CASE-ARC-10043-1] c05 N71-11193  
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 biological measurements  
 [NASA-CASE-XMS-04212-1] c05 N71-12346  
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 automatic indication of sleep state and level  
 of consciousness  
 [NASA-CASE-HSC-13282-1] c05 N71-24729  
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 which poisoning by organic molecules is  
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 [NASA-CASE-XMS-04213-1] c09 N71-26002  
 Ultrasonic biomedical measuring and recording  
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 organs such as heart valves  
 [NASA-CASE-ARC-10597-1] c05 N74-20726  
 Subminiature insertable force transducer ---  
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 muscles  
 [NASA-CASE-NPO-13423-1] c33 N75-31329  
 Thermistor holder for skin temperature  
 measurements  
 [NASA-CASE-ARC-10855-1] c52 N75-33642  
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 transporting external electrical signals to  
 internal body parts  
 [NASA-CASE-KSC-10849-1] c54 N76-19816
- BIOFLUORESCENCE**  
 Detection instrument for light emitted from ATP  
 biochemical reaction  
 [NASA-CASE-XGS-05534] c23 N71-16355  
 Describing method for lyophilization of  
 luciferase containing mixtures for use in life  
 detection reactions  
 [NASA-CASE-XGS-05532] c06 N71-17705  
 Application of luciferase assay for ATP to  
 antimicrobial drug susceptibility testing  
 [NASA-CASE-GSC-12039-1] c51 N75-26629
- BIOIMMUNOLOGICAL DATA**  
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 vivo biomedical use  
 [NASA-CASE-XMS-01177] c05 N71-19440
- BIOINSTRUMENTATION**  
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 biological measurements  
 [NASA-CASE-XMS-04212-1] c05 N71-12346  
 Compressible electrolyte saturated sponge  
 electrode for biomedical applications
- [NASA-CASE-HSC-13648] c05 N72-27103  
 Ultrasonic biomedical measuring and recording  
 apparatus --- for recording motion of internal  
 organs such as heart valves  
 [NASA-CASE-ARC-10597-1] c05 N74-20726  
 Arterial pulse wave pressure transducer  
 [NASA-CASE-GSC-11531-1] c05 N74-27566
- BIOTELEMETRY**  
 Biotelemetry apparatus with dual voltage  
 generators for implanting in animals  
 [NASA-CASE-XAC-05706] c05 N71-12342  
 Miniature multichannel biotelemetry system  
 [NASA-CASE-NPO-13065-1] c05 N74-26625  
 Medical subject monitoring systems ---  
 multichannel monitoring systems  
 [NASA-CASE-HSC-14180-1] c52 N76-14757
- BIREFRINGENCE**  
 Automatic polarimeter capable of measuring  
 transient birefringence changes in  
 electro-optic materials  
 [NASA-CASE-XNP-08883] c23 N71-16101
- BISMUTH COMPOUNDS**  
 Hall effect magnetometer  
 [NASA-CASE-LEW-11632-2] c35 N75-13213
- BISTABLE CIRCUITS**  
 Bistable multivibrator circuits operating at  
 high speed and low power dissipation  
 [NASA-CASE-XGS-00823] c10 N71-15910
- BIT SYNCHRONIZATION**  
 Telemetry data unit to form multibit words for  
 use between demodulator and computer  
 [NASA-CASE-XNP-09225] c09 N69-24333  
 Bit synchronization system using digital data  
 transition tracking phased locked loop  
 [NASA-CASE-NPO-10844] c07 N72-20140  
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 signal, without separate synchronization  
 channel by digital correlation  
 [NASA-CASE-NPO-11302-1] c07 N73-13149  
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 digital communications system ---  
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 digital correlation with reference signal  
 [NASA-CASE-NPO-11302-2] c07 N74-10132
- BITERNARY CODE**  
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 biorthogonal Reed-Muller type code comprising  
 conversion of 64 6-bit words into 64 32-bit  
 data for communication purposes  
 [NASA-CASE-NPO-10595] c10 N71-25917
- BITS**  
 Logic circuit for generating multibit binary  
 code word in parallel  
 [NASA-CASE-XNP-04623] c10 N71-26103  
 MOD 2 sequential function generator for multibit  
 sequence, with two-bit shift register for each  
 pair of bits  
 [NASA-CASE-NPO-10636] c08 N72-25210
- BLACK BODY RADIATION**  
 Development of black-body source calibration  
 furnace  
 [NASA-CASE-XLE-01399] c33 N71-15625  
 Black body cavity radiometer with thermal  
 resistance wire bridge circuit  
 [NASA-CASE-XNP-08961] c14 N71-24809  
 Black body radiometer design with temperature  
 sensing and cavity heat source cone winding  
 [NASA-CASE-XNP-09701] c14 N71-26475  
 Black body radiometer having isothermally  
 surrounded cavity for ultraviolet, visible,  
 and infrared radiation  
 [NASA-CASE-NPO-10810] c14 N71-27323
- BLADE TIPS**  
 Modification and improvement of turbine blades  
 for maximum cooling efficiency  
 [NASA-CASE-XLE-00092] c15 N70-33264
- BLADES (CUTTERS)**  
 Piston in bore cutter for severing parachute  
 control lines and sealing cable hole to  
 prevent water leakage into load  
 [NASA-CASE-XMS-04072] c15 N70-42017
- BLAST LOADS**  
 Development of apparatus for detonating  
 explosive devices in order to determine forces  
 generated and detonation propagation rate  
 [NASA-CASE-LAR-10800-1] c33 N72-27959
- BLOOD**  
 Reduction of blood serum cholesterol  
 [NASA-CASE-NPO-12119-1] c52 N75-15270

**BLOOD PRESSURE**

Blood pressure measuring system for separately recording dc and ac pressure signals of Korotkoff sounds  
[NASA-CASE-XMS-06061] c05 N71-23317  
Apparatus and method for processing Korotkov sounds --- for blood pressure measurement  
[NASA-CASE-MSC-13999-1] c05 N74-26626  
Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c05 N74-27566  
Circuit for detecting initial systole and diastolic notch --- for monitoring arterial pressure  
[NASA-CASE-LEW-11581-1] c54 N75-13531

**BLOFF BODIES**

Bluff-shaped annular configuration for supersonic decelerator for reentry vehicles  
[NASA-CASE-XLE-00222] c02 N70-37939

**BLUNT BODIES**

Wind tunnel method for simulating flow fields around blunt vehicles entering planetary atmospheres without involving high temperatures  
[NASA-CASE-LAR-11138] c12 N71-20436

**BODIES OF REVOLUTION**

Conforming polisher for aspheric surfaces of revolution with inflatable tube  
[NASA-CASE-XGS-02884] c15 N71-22705  
Test fixture for measuring moment of inertia of irregularly shaped body with multiple axes  
[NASA-CASE-XGS-01023] c14 N71-22992

**BODY FLUIDS**

Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c05 N74-22771  
Improved method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c51 N75-21921

**BODY KINEMATICS**

Space suit with improved waist and torso movement  
[NASA-CASE-ARC-10275-1] c05 N72-22092

**BODY MEASUREMENT (BIOLOGY)**

Ingestible miniaturized telemetry device for deep body temperature measurements on humans and animals  
[NASA-CASE-ARC-10583-1] c05 N73-14093  
Ultra-flexible biomedical electrodes and wires  
[NASA-CASE-ARC-10268-2] c05 N74-11900  
Ultra-flexible biomedical electrode and wires  
[NASA-CASE-ARC-10268-3] c05 N74-11901

**BODY TEMPERATURE**

Thermoregulating with cooling flow pipe network for humans  
[NASA-CASE-XMS-10269] c05 N71-24147

**BODY VOLUME (BIOLOGY)**

Whole body measurement systems --- for weightlessness simulation  
[NASA-CASE-MSC-13972-1] c05 N74-10975

**BOILERS**

Vapor generating boiler system for turbine motor  
[NASA-CASE-XLE-00785] c33 N71-16104  
Shell-side liquid metal boiler employing tube and shell heat exchanger  
[NASA-CASE-NPO-10831] c33 N72-20915

**BOLOMETERS**

High impedance alternating current sensing transformer device between two bolometers for measuring insertion loss of test component  
[NASA-CASE-XNP-01193] c10 N71-16057  
Thin film capacitive bolometer and capacitance temperature interchange sensor  
[NASA-CASE-NPO-10607] c09 N71-27232

**BOLTS**

Patent data on gas actuated bolt disconnect assembly  
[NASA-CASE-XLA-00326] c03 N70-34667  
Bolt-latch mechanism for releasing despin weights from space vehicle  
[NASA-CASE-XLA-00679] c15 N70-38601  
Gage for quality control of sealing surfaces of threaded boss  
[NASA-CASE-XMF-04966] c14 N71-17658  
Split nut and bolt separation device  
[NASA-CASE-XNP-06914] c15 N71-21489  
Device for securing together structural members with axially stretched bolt and nut  
[NASA-CASE-GSC-11149-1] c15 N73-30457

**BONDING**

Silver chloride use in technique for fusion bonding of graphite to silver, glass, ceramics, and certain other metals  
[NASA-CASE-XGS-00963] c15 N69-39735

Bonded joint and method --- for reducing peak shear stress in adhesive bonds  
[NASA-CASE-LAR-10900-1] c15 N74-23064  
Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c24 N75-30260  
Strain arrestor plate for fused silica tile --- bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c27 N76-14264  
Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c24 N76-19234

**BONES**

Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c35 N75-12271  
Method and system for in vivo measurement of bone tissue  
[NASA-CASE-MSC-14276-1] c54 N75-21948

**BOOMS (EQUIPMENT)**

Unfolding boom assembly with knuckle joints for positioning equipment for spacecraft  
[NASA-CASE-XGS-00938] c32 N70-41367  
Collapsible antenna boom and coaxial transmission line having inflatable inner tube  
[NASA-CASE-MFS-20068] c07 N71-27191  
Extendable, self-deploying boom apparatus  
[NASA-CASE-GSC-10566-1] c15 N72-18477  
Design and characteristics of mechanically extended and telescoping boom on crane assembly  
[NASA-CASE-NPO-11118] c03 N72-25021

**BOOSTER RECOVERY**

Techniques for recovery of multistage rocket vehicles by providing lifting surfaces on individual sections  
[NASA-CASE-XMP-00389] c31 N70-34176  
Recoverable, reusable single stage booster capable of injecting large payloads into circular earth orbit  
[NASA-CASE-XMF-01973] c31 N70-41588

**BOOSTER ROCKET ENGINES**

Segmented back-up bar for butt welding large tubular structures such as rocket booster bodies or tanks  
[NASA-CASE-XMP-00640] c15 N70-39924  
Recoverable, reusable single stage booster capable of injecting large payloads into circular earth orbit  
[NASA-CASE-XMF-01973] c31 N70-41588

**BORING MACHINES**

Automatic controlled drive mechanism for portable boring bar  
[NASA-CASE-XLA-03661] c15 N71-33518

**BORON**

Radiation hardening of MOS devices by boron --- for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c24 N74-20329

**BORON CARBIDES**

Catalyst for increased growth of boron carbide crystal whiskers  
[NASA-CASE-XHQ-03903] c15 N69-21922

**BOUNDARY LAYER CONTROL**

Double hinged flap for boundary layer control over trailing edges of wings  
[NASA-CASE-XLA-01290] c02 N70-42016

**BOUNDARY LAYER SEPARATION**

Tertiary flow injection system for thrust vectoring of propulsive nozzle flow  
[NASA-CASE-MFS-20831] c28 N71-29153  
Controlled separation combustor --- airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c20 N76-14190

**BOUNDARY LAYERS**

Flow meter for measuring stagnation pressure in boundary layer around high speed flight vehicle  
[NASA-CASE-XFR-02007] c12 N71-24692  
Development of thermocouple instrument for measuring temperature of wall heated by flowing fluid without disturbing boundary layer  
[NASA-CASE-XLE-05230] c14 N72-27410

**BOXES (CONTAINERS)**

Sealed storage container for channel carriers with mounted miniature electronic components  
[NASA-CASE-MFS-20075] c09 N71-26133

**BRAKES (FOR ARRESTING MOTION)**

Energy dissipating shock absorbing system for land payload recovery or vehicle braking  
[NASA-CASE-XLA-00754] c15 N70-34850

## BRAKING

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- Automatic braking device for rapidly transferring humans or materials from elevated location  
[NASA-CASE-XKS-07814] c15 N71-27067
- Sprag solenoid brake --- development and operations of electrically controlled brake  
[NASA-CASE-MPS-21846-1] c15 N74-26976
- Motion restraining device --- for dissipating at a controlled rate the force of a moving body  
[NASA-CASE-NPO-13619-1] c37 N75-22748
- Reel safety brake  
[NASA-CASE-GSC-11960-1] c37 N76-13495
- BRAKING**
- Direct current electromotive system for regenerative braking of electric motor  
[NASA-CASE-XMP-01096] c10 N71-16030
- Linear magnetic braking system with nonuniformly wrapped primary coil producing constant braking force on secondary coil  
[NASA-CASE-XLE-05079] c15 N71-17652
- Anemometer with braking mechanism to prevent rotation of wind driven elements  
[NASA-CASE-XMP-05224] c14 N71-23726
- BRAZING**
- Anti-wettable materials brazing processes using titanium and zirconium for surface pretreatment  
[NASA-CASE-XMS-03537] c15 N69-21471
- Application techniques for protecting materials during salt bath brazing  
[NASA-CASE-XLE-00046] c15 N70-33311
- Joining aluminum to stainless steel by bonding aluminum coatings onto titanium coated stainless steel and brazing aluminum to aluminum/titanium coated steel  
[NASA-CASE-MPS-07369] c15 N71-20443
- Brazing alloy adapted for brazing corrosion resistant steel to refractory metals, also for brazing refractory metals to other refractory metals  
[NASA-CASE-XNP-03063] c17 N71-23365
- Electric resistance spot welding and brazing for producing metal bonds with superior mechanical and structural characteristics  
[NASA-CASE-LAR-11072-1] c15 N73-20535
- Brazing alloy binder  
[NASA-CASE-XMP-05868] c26 N75-27125
- Brazing alloy composition  
[NASA-CASE-XMP-06053] c26 N75-27126
- Brazing alloy  
[NASA-CASE-XNP-03878] c26 N75-27127
- Method of fluxless brazing and diffusion bonding of aluminum containing components  
[NASA-CASE-MSC-14435-1] c37 N76-18455
- BREATHING APPARATUS**
- Three-port transfer valve with one port open continuously suitable for manned space flight  
[NASA-CASE-XAC-01158] c15 N71-23051
- Self-contained breathing apparatus  
[NASA-CASE-MSC-14733-1] c54 N75-13534
- BRICKS**
- Development of construction block in form of container folded from flat sheet and filled with solid material for architectural purposes  
[NASA-CASE-MSC-12233-2] c32 N73-13921
- BRIGHTNESS**
- Modulating and controlling intensity of light beam from high temperature source by servocontrolled rotating cylinders  
[NASA-CASE-XMS-04300] c09 N71-19479
- BRIGHTNESS DISCRIMINATION**
- Video signal processing system for sampling video brightness levels  
[NASA-CASE-NPO-10140] c07 N71-24742
- Automated visual sensitivity tester for determining visual field sensitivity and blind spot size  
[NASA-CASE-ARC-10329-1] c05 N73-26072
- BRITTLENESS**
- Rock sampling --- apparatus for controlling particle size  
[NASA-CASE-XNP-10007-1] c15 N74-23068
- Rock sampling --- method for controlling particle size distribution  
[NASA-CASE-XNP-09755] c15 N74-23069
- BROADBAND**
- Broadband chokes and absorbers to reduce spurious radiation patterns of antenna array caused by support structures  
[NASA-CASE-XMS-05303] c07 N69-27462
- Flexible monopole antenna with broad bandwidth and low voltage standing wave ratio  
[NASA-CASE-MSC-12101] c09 N71-18720
- Broadband frequency discriminator with resistive captive inductive networks  
[NASA-CASE-NPO-10096] c07 N71-24583
- Broadband microwave waveguide window to compensate dielectric material filling  
[NASA-CASE-XNP-08880] c09 N71-24808
- Comb type traveling wave maser amplifier for improved high gain broadband output  
[NASA-CASE-NPO-10548] c16 N71-24831
- Wideband voltage controlled oscillator with high phase stability  
[NASA-CASE-XLA-03893] c10 N71-27271
- Multimode antenna feed system for microwave and broadband communication  
[NASA-CASE-GSC-11046-1] c07 N73-28013
- BROADBAND AMPLIFIERS**
- Solid state broadband stable power amplifier  
[NASA-CASE-XNP-10854] c10 N71-26331
- Broadband distribution amplifier with complementary pair transistor output stages  
[NASA-CASE-NPO-10003] c10 N71-26415
- BROADCASTING**
- Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c32 N75-26194
- BROMINE**
- Hydrogen-bromine secondary battery  
[NASA-CASE-NPO-13237-1] c44 N76-18641
- BRUSHES**
- Fabrication of sintered impurity semiconductor brushes for electrical energy transfer  
[NASA-CASE-XNP-01016] c26 N71-17818
- BUCKLING**
- Miniature vibration isolator utilizing elastic tubing material  
[NASA-CASE-XLA-01019] c15 N70-40156
- Test equipment to prevent buckling of small diameter specimens during compression tests  
[NASA-CASE-LAR-10440-1] c14 N73-32323
- BUFFER STORAGE**
- Data handling based on source significance, storage availability, and data received from source  
[NASA-CASE-XNP-04162-1] c08 N70-34675
- Data acquisition and processing system with buffer storage and timing device for magnetic tape recording of PCM data and timing information  
[NASA-CASE-NPO-12107] c08 N71-27255
- Digital to analog converter with parallel input/output memory device  
[NASA-CASE-KSC-10397] c08 N72-25206
- BUILDINGS**
- Apparatus and method of assembling building blocks by folding pre-cut flat sheets of material during on-site construction  
[NASA-CASE-MSC-12233-1] c15 N72-25454
- BULKHEADS**
- Liquid propellant tank design with semitoroidal bulkhead  
[NASA-CASE-XMP-01899] c31 N70-41948
- BUOYANCY**
- Inflatable radar reflector unit - lightweight, highly reflective to electromagnetic radiation, and adaptable for erection and deployment with minimum effort and time  
[NASA-CASE-XMS-00893] c07 N70-40063
- BURNING RATE**
- Pressurized gas injection for burning rate control of solid propellants  
[NASA-CASE-XLE-03494] c27 N71-21819
- Development of apparatus for testing burning rate and flammability of materials  
[NASA-CASE-XMS-09690] c33 N72-25913
- BURNOUT**
- Spherical solid propellant rocket engine having abrupt burnout  
[NASA-CASE-XHQ-01897] c28 N70-35381
- BUTT JOINTS**
- Channel-type shell construction for rocket engines and related configurations  
[NASA-CASE-XLE-00144] c28 N70-34860
- Segmented back-up bar for butt welding large tubular structures such as rocket booster bodies or tanks  
[NASA-CASE-XMP-00640] c15 N70-39924

Apparatus for welding sheet material --- butt joints  
 [NASA-CASE-XMS-01330] c37 N75-27376  
**BUTTERFLY VALVES**  
 Flexible inflatable seal for butterfly valves  
 [NASA-CASE-XLE-00101] c15 N70-33376  
**BYPASSES**  
 Low power drain transistor feedback circuit  
 [NASA-CASE-XGS-04999] c09 N69-24317  
 Helical coaxial resonator RF filter  
 [NASA-CASE-XGS-02816] c07 N69-24323  
 Current regulating voltage divider design with load current shunting  
 [NASA-CASE-MPS-20935] c09 N71-34212  
 Electrical interconnection of unilluminated solar cells in solar battery array  
 [NASA-CASE-GSC-10344-1] c03 N72-27053

## C

**CABLE FORCE RECORDERS**

Design and characteristics of device for showing amount of cable payed out from winch and load imposed  
 [NASA-CASE-MSC-12052-1] c15 N71-24599

**CABLES**

Cable guide and restraint device for reefing tubes in uniform manner  
 [NASA-CASE-LAR-10129-1] c15 N73-25512

**CABLES (ROPES)**

High voltage cable for use in high intensity ionizing radiation fields  
 [NASA-CASE-XNP-00738] c09 N70-38201  
 Force separation rigid tethering device using cables

[NASA-CASE-XLA-02332] c32 N71-17609  
 Support for flexible conductor cable between drawers or racks holding electronic equipment and cabinet assembly housing drawers or racks  
 [NASA-CASE-XMP-07587] c15 N71-18701  
 Design and construction of satellite appendage tie-down cord

[NASA-CASE-XGS-02554] c31 N71-21064  
 Quick attach mechanism for moving or stationary wires, ropes, or cables  
 [NASA-CASE-XPR-05421] c15 N71-22994

Flexible cable that can be made rigid  
 [NASA-CASE-MSC-13512-1] c15 N72-22485  
 Guide member for stabilizing cable of open shaft elevator

[NASA-CASE-KSC-10513] c15 N72-25453  
 Reefing system  
 [NASA-CASE-LAR-10129-2] c15 N74-20063

Emergency descent device  
 [NASA-CASE-MPS-23074-1] c54 N76-13770

**CADMIUM SULFIDES**

High field CdS detector for infrared radiation  
 [NASA-CASE-LAR-11027-1] c14 N74-18088

**CALCIUM**

Ultrasonic bone densitometer  
 [NASA-CASE-MPS-20994-1] c35 N75-12271

**CALCIUM FLUORIDES**

Bonded solid lubricant coatings of calcium fluoride and binder for high temperature stability  
 [NASA-CASE-XMS-00259] c18 N70-36400  
 Production of barium fluoride-calcium fluoride composite lubricant for bearings or seals

[NASA-CASE-XLE-08511-2] c18 N71-16105

**CALCIUM PHOSPHATES**

Process for preparing calcium phosphate salts for tooth repair  
 [NASA-CASE-ERC-10338] c04 N72-33072

**CALCULATORS**

Sun angle calculator  
 [NASA-CASE-MSC-12617-1] c35 N75-15019

**CALIBRATING**

Development and characteristics of self-calibrating displacement transducer for measuring magnitude and frequency of displacement of bodies  
 [NASA-CASE-XLA-00781] c09 N71-22999

Combination pressure transducer-calibrator assembly for measuring fluid  
 [NASA-CASE-XNP-01660] c14 N71-23036

Control system for pressure balance device used in calibrating pressure gages  
 [NASA-CASE-XMP-04134] c14 N71-23755

Phonocardiogram simulator producing electrical voltage waves to control amplitude and duration between simulated sounds  
 [NASA-CASE-IXS-10804] c05 N71-24606

Calibrator for measuring and modulating or demodulating laser outputs  
 [NASA-CASE-XLA-03410] c16 N71-25914

Plastic sphere for radar tracking and calibration  
 [NASA-CASE-XLA-11154] c07 N72-21117

Calibration of vacuum gauges for measuring total and partial pressures in ultrahigh vacuum region  
 [NASA-CASE-XGS-07752] c14 N73-30390

System for calibrating pressure transducer  
 [NASA-CASE-LAR-10910-1] c14 N74-13132

In situ transfer standard for ultrahigh vacuum gage calibration  
 [NASA-CASE-LAR-10862-1] c14 N74-15092

High temperature strain gage calibration fixture  
 [NASA-CASE-LAR-11500-1] c35 N75-13227

Ergometer calibrator --- for any ergometer utilizing rotating shaft  
 [NASA-CASE-MPS-21045-1] c35 N75-15932

Ultrasonic calibration device --- for producing changes in acoustic attenuation and phase velocity  
 [NASA-CASE-LAR-11435-1] c35 N76-15432

**CALORIMETERS**

Development and characteristics of calorimeter with integral heat sink for maintenance of constant temperature  
 [NASA-CASE-XMP-04208] c33 N71-29051

Heat flow calorimeter --- measures output of Ni-Cd batteries  
 [NASA-CASE-GSC-11434-1] c14 N74-27859

**CAMERA SHUTTERS**

Electrically operated rotary shutter for television camera aboard spacecraft  
 [NASA-CASE-XNP-00637] c14 N70-40273

Magnetically opened diaphragm design with camera shutter and expansion tube applications  
 [NASA-CASE-XLA-03660] c15 N71-21060

Development and characteristics of cyclically operable, optical shutter for use as focal plane shutter for transmitting single radiation pulses  
 [NASA-CASE-NPO-10758] c14 N73-14427

Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly --- for use with cameras mounted in satellites  
 [NASA-CASE-GSC-11560-1] c09 N74-20861

**CAMERAS**

Mechanism for measuring nanosecond time differences between luminous events using streak camera  
 [NASA-CASE-XLA-01987] c23 N71-23976

Camera adapter design for image magnification including lens and illuminator  
 [NASA-CASE-XMP-03844-1] c14 N71-26474

Longitudinal film gate and lock mechanism for securing film in motion picture cameras under vibration and high acceleration loads  
 [NASA-CASE-LAR-10686] c14 N71-28935

Design and characteristics of laser camera system with diffusion filter of small particles with average diameter larger than wavelength of laser light  
 [NASA-CASE-NPO-10417] c16 N71-33410

Optical scanner with linear housing and rotating camera  
 [NASA-CASE-NPO-11002] c14 N72-22441

Apparatus for on-film optical recording of camera lens aperture and focus setting  
 [NASA-CASE-MSC-12363-1] c14 N73-26431

Mechanical exposure interlock device for preventing film overexposure in oscilloscope camera  
 [NASA-CASE-LAR-10319-1] c14 N73-32322

Real time moving scene holographic camera system  
 [NASA-CASE-MPS-21087-1] c14 N74-17153

Automatic focus control for facsimile cameras  
 [NASA-CASE-LAR-11213-1] c35 N75-15014

Spectrometer integrated with a facsimile camera  
 [NASA-CASE-LAR-11207-1] c35 N75-19613

Real time, large volume, moving scene holographic camera system  
 [NASA-CASE-MPS-22537-1] c35 N75-27328

Holographic motion picture camera with Doppler shift compensation  
 [NASA-CASE-MPS-22517-1] c35 N76-18402

## CANARD CONFIGURATIONS

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- Camera arrangement --- for satellite scanning of earth or sky  
[NASA-CASE-GSC-12032-2] c35 N76-19408
- CANARD CONFIGURATIONS**
- Thrust and attitude control apparatus using jet nozzle in movable canard surface or fin configuration  
[NASA-CASE-XLE-03583] c31 N71-17629
- CANCER**
- Liquid-cooled brassiere  
[NASA-CASE-ARC-11007-1] c52 N76-18782
- CANOPIES**
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[NASA-CASE-ARC-10813-1] c27 N76-16230
- CANS**
- Design and characteristics of device for closing canisters under high vacuum conditions  
[NASA-CASE-XLA-01446] c15 N71-21528
- Extrusion can for extruding ceramics under heat and pressure  
[NASA-CASE-NPO-10812] c15 N73-13464
- CANTILEVER BEAMS**
- Pneumatic cantilever beams and platform for space erectable structure  
[NASA-CASE-XLA-01731] c32 N71-21045
- CANTILEVER MEMBERS**
- Deployable cantilever support for deploying solar cell arrays aboard spacecraft and reducing transient loading  
[NASA-CASE-NPO-10883] c31 N72-22874
- CAPACITANCE**
- Capacitance measuring device for determining flare accuracy on tapered tubes  
[NASA-CASE-XKS-03495] c14 N69-39785
- Device for measuring two orthogonal components of force with gallium flotation of measuring target for use in vacuum environments  
[NASA-CASE-XAC-04885] c14 N71-23790
- Thin film capacitive bolometer and capacitance temperature interchange sensor  
[NASA-CASE-NPO-10607] c09 N71-27232
- Capacitive tank gaging device for monitoring one constituent of two phase fluid by sensing dielectric constant  
[NASA-CASE-MFS-21629] c14 N72-22442
- Adjustable frequency response microphone  
[NASA-CASE-LAR-11170-1] c07 N74-12843
- Capacitance multiplier and filter synthesizing network  
[NASA-CASE-NPO-11948-1] c10 N74-32712
- CAPACITANCE SWITCHES**
- Electric discharge apparatus for electrohydraulic explosive forming  
[NASA-CASE-XMP-00375] c15 N70-34249
- Extra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit  
[NASA-CASE-XGS-00381] c09 N70-34819
- Feedback integrating circuit with grounded capacitor for signal processing  
[NASA-CASE-XAC-10607] c10 N71-23669
- CAPACITORS**
- Temperature sensitive capacitor device for detecting very low intensity infrared radiation  
[NASA-CASE-XNP-09750] c14 N69-39937
- Energy source with tantalum capacitors in parallel and miniature silver oxide button cells for initiating pyrotechnic devices on spacecraft and rocket vehicles  
[NASA-CASE-LAR-10367-1] c03 N70-26817
- Electrical power system for space flight vehicles operating over extended periods  
[NASA-CASE-XNP-00517] c03 N70-34157
- Capacitor for measuring density of compressible fluid in liquid, gas, or liquid and gas phases  
[NASA-CASE-XLE-00143] c14 N70-36618
- Capacitor sandwich structure containing metal sheets of known thickness for counting penetration rates of meteoroids  
[NASA-CASE-XLE-01246] c14 N71-10797
- Capacitor fabrication by solidifying mixture of ferromagnetic metal particles, nonferromagnetic particles, and dielectric material  
[NASA-CASE-LEW-10364-1] c09 N71-13522
- Mechanism for measuring nanosecond time differences between luminous events using streak camera  
[NASA-CASE-XLA-01987] c23 N71-23976
- Circuit for monitoring power supply by ripple current indication  
[NASA-CASE-KSC-10162] c09 N72-11225
- Thermoelectric radiometer using polymer film as capacitor  
[NASA-CASE-ARC-10138-1] c14 N72-24477
- Material compositions and processes for developing dielectric thick films used in microcircuit capacitors  
[NASA-CASE-LAR-10294-1] c26 N72-28762
- Micrometeoroid analyzer using arrays of interconnected capacitors and ion detector  
[NASA-CASE-ARC-10443-1] c14 N73-20477
- Insulated electrocardiographic electrodes --- without paste electrolyte  
[NASA-CASE-MSC-14339-1] c05 N75-24716
- High temperature beryllium oxide capacitor  
[NASA-CASE-LEW-11938-1] c33 N76-15373
- CAPILLARY FLOW**
- Capillary radiator for carrying heat transfer liquid in planetary spacecraft structures  
[NASA-CASE-XLE-03307] c33 N71-14035
- Lubrication for bearings by capillary action from oil reservoir of porous material  
[NASA-CASE-XNP-03972] c15 N71-23048
- Soldering device particularly suited to making high quality wiring joints for aerospace engineering utilizing capillary attraction to regulate flow of solder  
[NASA-CASE-XLA-08911] c15 N71-27214
- CAPILLARY TUBES**
- Tubular flow restrictor for gas flow control in pipeline  
[NASA-CASE-NPO-10117] c15 N71-15608
- Development of liquid separating system using capillary device connected to flexible bladder storage chamber  
[NASA-CASE-XMS-13052] c14 N71-20427
- Interrupter switching device utilizing electrodes and mercury filled capillary tubes in which current flow vaporizes mercury as circuit breaker  
[NASA-CASE-XNP-02251] c12 N71-20896
- Diffused waveguiding capillary tube with distributed feedback for a gas laser  
[NASA-CASE-NPO-13544-1] c36 N76-18428
- CARBAZOLES**
- Method of producing output voltage from photovoltaic cell using poly-N-vinyl carbazole complexed with iodine  
[NASA-CASE-NPO-10373] c03 N71-18698
- CARBOHYDRATES**
- Decontamination of petroleum products with honey  
[NASA-CASE-XNP-03835] c06 N71-23499
- CARBON ARCS**
- Water cooled contactors for holding rotating carbon arc anode  
[NASA-CASE-XMS-03700] c15 N69-24266
- CARBON COMPOUNDS**
- Vapor deposited laminated nitride-silicon coating for corrosion prevention of carbonaceous surfaces  
[NASA-CASE-XLA-00284] c15 N71-16075
- CARBON DIOXIDE**
- Carbon dioxide purge systems to prevent condensation in spaces between cryogenic fuel tanks and hypersonic vehicle skin  
[NASA-CASE-XLA-01967] c31 N70-42015
- Fast response miniature carbon dioxide detector with no moving parts for measuring concentration in any atmosphere  
[NASA-CASE-MSC-13332-1] c14 N72-21408
- Method for detecting pollutants --- ozone, nitrogen dioxide, carbon dioxide  
[NASA-CASE-LAR-11405-1] c35 N75-15938
- CARBON DIOXIDE LASERS**
- Repetitively pulsed wavelength selective carbon dioxide laser  
[NASA-CASE-ERC-10178] c16 N71-24832
- Performance of ac power supply developed for CO2 laser system  
[NASA-CASE-GSC-11222-1] c16 N73-32391
- Stark-effect modulation of CO2 laser with NH2D  
[NASA-CASE-NPO-11945-1] c36 N76-18427
- CARBON DIOXIDE REMOVAL**
- Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c06 N74-12813



**CARBON MONOXIDE**

Carbon monoxide monitor --- using real time operation  
[NASA-CASE-MPS-22060-1] c35 N75-29380

**CARBONATES**

Chemical and physical properties of synthetic polyurethane polymer prepared by reacting hydroxy carbonate with organic diisocyanate  
[NASA-CASE-MPS-10512] c06 N73-30099

**CARBOXYL GROUP**

Carboxyl terminated polyester prepolymers and foams produced from prepolymers and materials  
[NASA-CASE-NPO-10596] c06 N71-25929

**CARBOXYLIC ACIDS**

Stable polyimide synthesis from mixtures of monomeric diamines and polycarboxylic acid esters  
[NASA-CASE-LEW-11325-1] c06 N73-27980  
Fluorinated esters of polycarboxylic acid and lubricating compositions for use at extreme temperature  
[NASA-CASE-MPS-21040-1] c06 N73-30098

**CARCINOGENS**

Spectrophotofluorometer with 3-dimensional display to identify fluorescence spectra of carcinogenic and noncarcinogenic hydrocarbons  
[NASA-CASE-XGS-01231] c14 N70-41676

**CARDIOGRAPHY**

Digital cardiometer incorporating circuit for measuring heartbeat rate of subject over predetermined portion of one minute also converting rate to beats per minute  
[NASA-CASE-XMS-02399] c05 N71-22896  
Reference apparatus for medical ultrasonic transducer  
[NASA-CASE-ARC-10753-1] c54 N75-27760

**CARDIOLOGY**

Development of instantaneous reading tachometer for measuring electrocardiogram signal rate  
[NASA-CASE-MPS-20418] c14 N73-24473

**CARDIOTACHOMETERS**

Digital computing cardiometer  
[NASA-CASE-MPS-20284-1] c05 N74-12778

**CARDIOVASCULAR SYSTEM**

Ear oximeter for monitoring blood oxygenation and pressure, pulse rate, and pressure pulse curve, using dc and ac amplifiers  
[NASA-CASE-XAC-05422] c04 N71-23185  
Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c54 N75-25598

**CARRIER FREQUENCIES**

Demodulator for simultaneous demodulation of two modulating ac signal carriers close in frequency  
[NASA-CASE-XNP-01160] c07 N71-11298

Automatic carrier acquisition system for phase locked loop receiver  
[NASA-CASE-NPO-11628-1] c07 N73-30113

Demodulator for carrier transducers  
[NASA-CASE-NUC-10107-1] c09 N74-17930

Decision feedback loop for tracking a polyphase modulated carrier  
[NASA-CASE-NPO-13103-1] c07 N74-20811

Linear phase demodulator  
[NASA-CASE-GSC-12018-1] c17 N76-13169

**CARRIER WAVES**

Variable frequency subcarrier oscillator with temperature compensation  
[NASA-CASE-XNP-03916] c09 N71-28810

Modulator for tone and binary signals --- phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c32 N75-24981

**CARRIERS**

Sealed storage container for channel carriers with mounted miniature electronic components  
[NASA-CASE-MPS-20075] c09 N71-26133

Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MPS-21394-1] c12 N74-27744

**CARTESIAN COORDINATES**

Design and development of random function tracer for obtaining coordinates of points on contour maps  
[NASA-CASE-XLA-01401] c15 N71-21179

**CARTRIDGES**

Tape cartridge with high capacity storage of endless-loop magnetic tape  
[NASA-CASE-XGS-00769] c14 N70-41647

Endless loop tape transport mechanism for driving and tensioning recording medium in magnetic tape recorder  
[NASA-CASE-XGS-01223] c07 N71-10609

Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c06 N74-12813

**CASCADE CONTROL**

Reversible ring counter using cascaded single silicon controlled rectifier stages  
[NASA-CASE-XGS-01473] c09 N71-10673

Synchronous dc direct-drive system comprising multiple-loop hybrid control system controlling load directly connected to actuator  
[NASA-CASE-GSC-10065-1] c10 N71-27136

Multiloop RC active filter network with low parameter sensitivity and low amplifier gain  
[NASA-CASE-ARC-10192] c09 N72-21245

**CASES (CONTAINERS)**

Nonmagnetic hermetically sealed battery case made of epoxy resin and woven glass tape for use with electrochemical cells in spacecraft  
[NASA-CASE-XGS-00886] c03 N71-11053

Protected isotope heat source --- for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c73 N75-30876

**CASSEGRAIN ANTENNAS**

Cassegrain antenna subreflector flange for suppressing ground noise and increasing antenna transmitting efficiency  
[NASA-CASE-XNP-00683] c09 N70-35425

Design and operation of multi-feed cone Cassegrain antenna  
[NASA-CASE-NPO-10539] c07 N71-11285

Synchronous detection system for detecting weak radio astronomical signals  
[NASA-CASE-XNP-09832] c30 N71-23723

Dual frequency feed systems for Cassegrainian antennas  
[NASA-CASE-NPO-13091-1] c09 N73-12214

Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c07 N74-11000

**CASTING**

Hydraulic apparatus for casting and molding of liquid polymers  
[NASA-CASE-XNP-07659] c06 N71-22975

**CASTINGS**

Method of making an apertured casting  
[NASA-CASE-LEW-11169-1] c15 N74-18131

**CATALYSIS**

Unit for generating thrust from catalytic decomposition of hydrogen peroxide, for high altitude aircraft or spacecraft reaction control  
[NASA-CASE-XMS-00583] c28 N70-38504

Photon excited catalysis  
[NASA-CASE-NPO-13566-1] c25 N76-17216

**CATALYSTS**

Catalyst for increased growth of boron carbide crystal whiskers  
[NASA-CASE-XHQ-03903] c15 N69-21922

Catalyst bed element removing tool  
[NASA-CASE-XPR-00811] c15 N70-36901

Catalyst bed ignition system for hydrazine propellants  
[NASA-CASE-XNP-00876] c28 N70-41311

Development of device for detecting hydrogen in ambient environments  
[NASA-CASE-MPS-11537] c14 N71-20442

Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c06 N74-12813

**CATALYTIC ACTIVITY**

Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-1] c06 N74-34579

A zirconium modified nickel-copper alloy  
[NASA-CASE-LEW-12245-1] c26 N75-26087

**CATHETERIZATION**

Transducer circuit design with single coaxial cable for input and output connections including incorporation into miniaturized catheter transducer  
[NASA-CASE-ARC-10132-1] c09 N71-24597

Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c54 N75-25598

## CATHODE RAY TUBES

## SUBJECT INDEX

## CATHODE RAY TUBES

Cathode ray oscilloscope for analyzing electrical waveforms representing amplitude distribution of time function  
[NASA-CASE-XNP-01383] c09 N71-10659

Cathode ray tube system for displaying ones and zeros in binary wave train  
[NASA-CASE-XGS-04987] c08 N71-20571

Indexing mechanism for cathode array substitution in electron beam tube  
[NASA-CASE-NPO-10625] c09 N71-26182

Color television system utilizing single gun current sensitive color cathode ray tube  
[NASA-CASE-ERC-10098] c09 N71-28618

Digital video system for displaying image and alphanumeric data on cathode ray tube  
[NASA-CASE-NPO-11342] c09 N72-25248

Switching circuit for control of cathode ray tube beam with fast rise time for output signal  
[NASA-CASE-KSC-10647-1] c10 N72-31273

Situational display system of cathode ray tubes to assist pilot in aircraft control  
[NASA-CASE-ERC-10350] c14 N73-20474

Very high intensity light source using a cathode ray tube --- electron beams  
[NASA-CASE-XNP-01296] c33 N75-27250

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Encapsulated heater forming hollow body for cathode used in ion thruster  
[NASA-CASE-LEW-10814-1] c28 N70-35422

Electronic cathodes for use in electron bombardment ion thrusters  
[NASA-CASE-XLE-04501] c09 N71-23190

Design and characteristics of heat activated electric cell with anode made from one or more alkali metals and cathode made from oxidizing material  
[NASA-CASE-LEW-11358] c03 N71-26084

Characteristics of ion rocket engine with combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c28 N73-24783

Storage battery comprising negative plates of a wedge shaped configuration --- for preventing shape change induced malfunctions  
[NASA-CASE-NPO-11806-1] c03 N74-19693

## CATIONS

Water insoluble, cationic permselective membrane  
[NASA-CASE-NPO-11091] c18 N72-22567

## CAVITATION FLOW

Semitoroidal diaphragm cavitating flow control valve  
[NASA-CASE-XNP-09704] c12 N71-18615

## CAVITIES

Black body radiometer having isothermally surrounded cavity for ultraviolet, visible, and infrared radiation  
[NASA-CASE-NPO-10810] c14 N71-27323

Method for coating through-holes in ceramic substrates used in fabricating miniaturized electronic circuits  
[NASA-CASE-XNP-05999] c15 N71-29032

Soil burrowing mole apparatus  
[NASA-CASE-XNP-07169] c15 N73-32362

Fabrication of hollow elastomeric bodies  
[NASA-CASE-NPO-13535-1] c37 N75-21637

Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c20 N76-21276

## CAVITY RESONATORS

Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c07 N69-24323

Semiconductor in resonant cavity for improving signal to noise ratio of communication receiver  
[NASA-CASE-MSC-12259-1] c07 N70-12616

Thermally sensitive tuning probe for nullifying detuning effects in microwave cavity resonator of amplifier  
[NASA-CASE-XNP-00449] c14 N70-35220

Holder for high frequency crystal resonators  
[NASA-CASE-XNP-03637] c15 N71-21311

Superconductive resonant cavity for improved signal to noise ratio in communication signal  
[NASA-CASE-MSC-12259-2] c07 N72-33146

Infrared tunable dye laser with nonlinear wavelength mixing crystal in optical cavity  
[NASA-CASE-ARC-10463-1] c09 N73-32111

Tunable cavity resonator with ramp shaped supports  
[NASA-CASE-HQN-10790-1] c16 N74-11313

## CELESTIAL BODIES

Device for determining relative angular position of spacecraft and radiating celestial body  
[NASA-CASE-GSC-11444-1] c14 N73-28490

Position determination systems --- using orbital antenna scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c17 N76-21250

## CELESTIAL NAVIGATION

Development of star intensity measuring system which minimizes effects of outside interference  
[NASA-CASE-XNP-06510] c14 N71-23797

## CELL ANODES

Heat activated emf cells with aluminum anode  
[NASA-CASE-LEW-11359] c03 N71-28579

Heat activated cell with aluminum anode  
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## CELLS

Separation cell with permeable membranes for fluid mixture component separation  
[NASA-CASE-XMS-02952] c18 N71-20742

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[NASA-CASE-NPO-13587-1] c32 N75-26206

## CENTRIFUGES

Centrifuge mounted motion simulator with elevator mechanism  
[NASA-CASE-XAC-00399] c11 N70-34815

Liquid-gaseous centrifugal separator for weightlessness environment  
[NASA-CASE-XLA-00415] c15 N71-16079

Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c12 N74-30608

Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c34 N75-26282

## CERAMIC BONDING

Plasma spraying gun for forming diffusion bonded metal or ceramic coatings on substrates  
[NASA-CASE-XLE-01604-2] c15 N71-15610

Method of forming ceramic to metal seals impervious to gaseous and liquid mercury at high temperature  
[NASA-CASE-XNP-01263-2] c15 N71-26312

Method for making a hot wire anemometer and product thereof  
[NASA-CASE-ARC-10900-1] c35 N76-13455

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[NASA-CASE-XLA-03105] c15 N69-27483

Unfired-ceramic, highly reflective composite insulation for large launch vehicles  
[NASA-CASE-XNP-01030] c18 N70-41583

Unfired ceramic insulation for protection from radiant heating environments  
[NASA-CASE-MPS-14253] c33 N71-24858

Cermet for nuclear fuel constructed by pressing metal coated ceramic particles in die at temperature to cause bonding of metal coatings, and tested for thermal stability  
[NASA-CASE-LEW-10219-1] c18 N71-28729

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## CERAMIC NUCLEAR FUELS

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[NASA-CASE-LEW-10219-1] c18 N71-28729

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[NASA-CASE-XLE-00020] c15 N70-33226

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[NASA-CASE-XGS-02435] c18 N71-22998

Process for fiberizing ceramic materials with high fusion temperatures and tensile strength  
[NASA-CASE-XNP-00597] c18 N71-23088

Method for coating through-holes in ceramic substrates used in fabricating miniaturized electronic circuits  
[NASA-CASE-XNP-05999] c15 N71-29032

Extrusion can for extruding ceramics under heat and pressure  
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- Method of making an apertured casting  
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[NASA-CASE-NPO-13666-1] c27 N76-13293
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- Heated tungsten filter for removing oxygen impurities from cesium  
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[NASA-CASE-XNP-06936] c15 N71-24695
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[NASA-CASE-XKS-03381] c09 N71-22796
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[NASA-CASE-GSC-10735-1] c10 N71-26085
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[NASA-CASE-ARC-10042-2] c10 N72-11256
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[NASA-CASE-XLA-09843] c15 N72-27485
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[NASA-CASE-XMF-01599] c09 N71-20705
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[NASA-CASE-XMS-00913] c10 N71-23543
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[NASA-CASE-XGS-03120] c15 N71-24047
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[NASA-CASE-GSC-10114-1] c10 N71-27366
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[NASA-CASE-XGS-00174] c08 N70-34743
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[NASA-CASE-XNP-01129] c09 N70-38712
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[NASA-CASE-XNP-04780] c08 N71-19687
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[NASA-CASE-XLE-02008] c09 N71-21583
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[NASA-CASE-XNP-07477] c09 N71-26092
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[NASA-CASE-XNP-00745] c10 N71-28960
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[NASA-CASE-NPO-11078] c09 N72-25262  
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[NASA-CASE-GSC-11340-1] c10 N72-33230  
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[NASA-CASE-GSC-11849-1] c33 N76-16332

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[NASA-CASE-XMS-04300] c09 N71-19479

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[NASA-CASE-GSC-10021-1] c09 N71-24595  
Planar array circularly polarized antenna with wall slot excitation

[NASA-CASE-NPO-10301] c07 N72-11148  
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[NASA-CASE-ERC-10214] c09 N72-31235

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[NASA-CASE-LAR-10782-1] c15 N74-14133

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[NASA-CASE-XNP-02140] c09 N71-23097

**CLAMPING CIRCUITS**  
Clamped amplifier circuit for horizon scanner enabling amplification and accurate measurement of specified parameters

[NASA-CASE-XGS-01784] c10 N71-20782

**CLAMPS**  
Portable device for aligning surfaces of two adjacent wall or sheet sections for joining at point of junction

[NASA-CASE-XMP-01452] c15 N70-41371  
Hydraulic clamping of sheet stock specimens

[NASA-CASE-XLA-05100] c15 N71-17696  
Inertial component clamping assembly design for spacecraft guidance and control system mounting

[NASA-CASE-XMS-02184] c15 N71-20813  
Design and development of module joint clamping device for application to solar array construction

[NASA-CASE-XNP-02341] c15 N71-21531  
Quick attach mechanism for moving or stationary wires, ropes, or cables

[NASA-CASE-XPR-05421] c15 N71-22994

**CLAYS**  
White paint production by heating impure aluminum silicate clay having low solar absorptance

[NASA-CASE-XNP-02139] c18 N71-24184

**CLEAN ROOMS**  
Environmentally controlled suit for working in sterile chamber

[NASA-CASE-LAR-10076-1] c05 N73-20137

**CLEANERS**  
Device for back purging thrust engines

[NASA-CASE-XMS-04826] c28 N71-28849  
Noncontaminating swab with absorbent end covered with netted envelope to prevent egress of absorbent material

[NASA-CASE-MPS-18100] c15 N72-11390

**CLEANING**  
Device for removing plastic dust cover from digital computer disk packs for inspection and cleaning

[NASA-CASE-LAR-10590-1] c15 N70-26819

**CLEAR AIR TURBULENCE**  
Development of radiometric sensor to warn aircraft pilots of region of clear air turbulence along flight path

[NASA-CASE-ERC-10081] c14 N72-28437  
Clear air turbulence detector

[NASA-CASE-MPS-21244-1] c36 N75-15028

**CLIMBING FLIGHT**  
Aircraft indicator for pilot control of takeoff roll, climbout path and verticle flight path in poor visibility conditions

[NASA-CASE-XLA-00487] c14 N70-40157

**CLINICAL MEDICINE**  
Process for preparing calcium phosphate salts for tooth repair

[NASA-CASE-ERC-10338] c04 N72-33072  
Heat pipe production of high purity radioiodine for thyroid measurements

[NASA-CASE-LEW-11390-3] c11 N73-28128  
Measurement of gas production of microorganisms --- using pressure sensors

[NASA-CASE-LAR-11326-1] c35 N75-33368

**CLOCKS**  
Time synchronization system for synchronizing clocks at remote locations with master clock using moon reflected coded signals

[NASA-CASE-NPO-10143] c10 N71-26326  
Circuit for measuring wide range of pulse rates by utilizing high capacity counter

[NASA-CASE-XNP-06234] c10 N71-27137  
Fault tolerant clock apparatus utilizing a controlled minority of clock elements

[NASA-CASE-MSC-12531-1] c35 N75-30504  
Clock setter

[NASA-CASE-LAR-11458-1] c35 N76-16392

**CLOSED CIRCUIT TELEVISION**  
Spacecraft docking and alignment system --- using television camera system

[NASA-CASE-MSC-12559-1] c18 N76-14186

**CLOSED CYCLES**  
Closed loop radio communication ranging system to determine distance between moving airborne vehicle and fixed ground station

[NASA-CASE-XNP-01501] c21 N70-41930  
Lead-oxygen dc power supply system

[NASA-CASE-MPS-23059-1] c44 N75-16078  
Digital phase-locked loop

[NASA-CASE-GSC-11623-1] c33 N75-25040

**CLOSED ECOLOGICAL SYSTEMS**  
Potable water reclamation from human wastes in zero-G environment

[NASA-CASE-XLA-03213] c05 N71-11207  
Spacecraft with artificial gravity and earthlike atmosphere

[NASA-CASE-LEW-11101-1] c31 N73-32750

**CLOSURES**  
Design and characteristics of device for closing canisters under high vacuum conditions

[NASA-CASE-XLA-01446] c15 N71-21528

**CLOUD CHAMBERS**  
Heat transfer device

[NASA-CASE-MPS-22938-1] c34 N76-18374

**CLOUDS (METEOROLOGY)**  
Development and characteristics of apparatus for measuring intensity of electric field in atmosphere

[NASA-CASE-KSC-10730-1] c14 N73-32318  
Electric field measuring and display system --- for cloud formations

[NASA-CASE-KSC-10731-1] c14 N74-27862

**COALESCING**  
Improved bimetallic junctions

- [NASA-CASE-LEW-11573-1] c26 N76-13267
- COATING**
- Solder coating process for printed copper circuit protection  
[NASA-CASE-XNP-01599] c09 N71-20705
- High thermal emittance black surface coatings and process for applying to metal and metal alloy surfaces used in radiative cooling of spacecraft  
[NASA-CASE-XLA-06199] c15 N71-24875
- COATINGS**
- Bonded solid lubricant coatings of calcium fluoride and binder for high temperature stability  
[NASA-CASE-XMS-00259] c18 N70-36400
- Selective coating for solar panels --- energy policy  
[NASA-CASE-LEW-12159-1] c44 N76-15603
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- Design and development of device for cooling inner conductor of coaxial cable  
[NASA-CASE-XNP-09775] c09 N71-20445
- Design and development of electric connectors for rigid and semirigid coaxial cables  
[NASA-CASE-XNP-04732] c09 N71-20851
- Transducer circuit design with single coaxial cable for input and output connections including incorporation into miniaturized catheter transducer  
[NASA-CASE-ARC-10132-1] c09 N71-24597
- Collapsible antenna boom and coaxial transmission line having inflatable inner tube  
[NASA-CASE-MFS-20068] c07 N71-27191
- Vibration isolation system, using coaxial helical compression springs  
[NASA-CASE-NPO-11012] c15 N72-11391
- Development and characteristics of hermetically sealed coaxial package for containing microwave semiconductor components  
[NASA-CASE-GSC-10791-1] c15 N73-14469
- System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c09 N74-17927
- Refrigerated coaxial coupling --- for microwave equipment  
[NASA-CASE-NPO-13504-1] c33 N75-30430
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- Self-energized plasma compressor  
[NASA-CASE-MFS-22145-2] c75 N76-17951
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- High strength, corrosion resistant cobalt-based alloys for aerospace structures  
[NASA-CASE-XLE-00726] c17 N71-15644
- High temperature cobalt-base alloy resistant to corrosion by liquid metals and to sublimation in vacuum environment  
[NASA-CASE-XLE-02991] c17 N71-16025
- High temperature ferromagnetic cobalt-base alloy for electrical power generating equipment  
[NASA-CASE-XLE-03629] c17 N71-23248
- Cobalt-tungsten alloys with superior strength at elevated temperatures  
[NASA-CASE-LEW-10436-1] c17 N73-32415
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- Controlled visibility device for simulating poor visibility conditions in training pilots in instrument landing and flight procedures  
[NASA-CASE-IFR-04147] c11 N71-10748
- CODERS**
- Design and development of encoder/decoder system to generate binary code which is function of outputs of plurality of bistable elements  
[NASA-CASE-NPO-10342] c10 N71-33407
- Biorthogonal encoder with modular design  
[NASA-CASE-NPO-10629] c08 N72-18184
- Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c07 N74-32598
- Capacitive shaft encoder  
[NASA-CASE-ARC-10897-1] c35 N76-12338
- CODING**
- Description of error correcting methods for use with digital data computers and apparatus for encoding and decoding digital data  
[NASA-CASE-XNP-02748] c08 N71-22749
- Binary concatenated coding system to measure, count, and record numerical information using minimized number of digits  
[NASA-CASE-MSC-14082-1] c08 N73-16163
- Apparatus and digital technique for coding rate data  
[NASA-CASE-LAR-10128-1] c08 N73-20217
- Space communication system for compressed data with a concatenated Reed Solomon-Viterbi coding channel  
[NASA-CASE-NPO-13545-1] c32 N75-26207
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- Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c09 N75-25966
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- Bioassay of flavin coenzymes  
[NASA-CASE-GSC-10565-1] c06 N72-25149
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- Design of folded traveling wave maser structure  
[NASA-CASE-XNP-05219] c16 N71-15550
- Development of focused image holography with extended sources  
[NASA-CASE-ERC-10019] c16 N71-15551
- COHERENT LIGHT**
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[NASA-CASE-MFS-20074] c16 N71-15565
- Development of apparatus for amplitude modulation of diode laser by periodic discharge of direct current power supply  
[NASA-CASE-XMS-04269] c16 N71-22895
- Coherent light beam device and method for measuring gas density in vacuum chambers  
[NASA-CASE-XER-11203] c14 N71-28994
- COHERENT RADIATION**
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[NASA-CASE-XNP-04167-3] c25 N72-21693
- Design and development of multichannel laser remote control system using modulated helium-neon laser as transmitter and light collector as receiving antenna  
[NASA-CASE-LAR-10311-1] c16 N73-16536
- Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c14 N74-11284
- Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c14 N74-20009
- Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c33 N74-27425
- Method and apparatus for generating coherent radiation in the ultraviolet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c70 N75-16307
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[NASA-CASE-GSC-11989-1] c35 N76-16395
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[NASA-CASE-MSC-14649-1] c33 N76-16331
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[NASA-CASE-LAR-10483-1] c14 N73-32327
- COLD WORKING**
- Cold metal hydroforming techniques using epoxy molds for counteracting creep or stretch  
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[NASA-CASE-MSC-13789-1] c11 N73-32152
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[NASA-CASE-LAR-11071-1] c35 N75-19611
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[NASA-CASE-GSC-11262-1] c16 N74-21091
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[NASA-CASE-MFS-20932-1] c35 N75-19616
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- Cooperative Doppler radar system for avoiding

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[NASA-CASE-LAR-10545-1] c09 N72-21244  
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[NASA-CASE-HQN-10703] c21 N73-13643  
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**COLLOIDAL PROPELLANTS**  
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[NASA-CASE-XLE-00817] c28 N70-33265  
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propellant for use under zero gravity conditions  
[NASA-CASE-XLE-01512] c12 N70-40124  
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[NASA-CASE-LAR-10953-1] c17 N73-27446

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[NASA-CASE-XMP-01779] c12 N71-20815

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[NASA-CASE-ERC-10098] c09 N71-28618  
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[NASA-CASE-MSC-12146-1] c07 N72-17109  
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[NASA-CASE-MSC-14683-1] c74 N75-33835  
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[NASA-CASE-XNP-04816] c06 N69-39936

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[NASA-CASE-XLE-00103] c28 N70-33241  
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[NASA-CASE-XLE-00150] c28 N70-41818  
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[NASA-CASE-XLE-04603] c33 N71-21507  
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[NASA-CASE-XLE-04857] c28 N71-23968  
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[NASA-CASE-NPO-11095] c15 N72-25455  
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[NASA-CASE-LEW-12441-1] c34 N75-19580  
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[NASA-CASE-LEW-11593-1] c20 N76-14190  
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[NASA-CASE-XLE-03494] c27 N71-21819

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efficiency of rocket engines  
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[NASA-CASE-XGS-01971] c15 N71-15922  
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[NASA-CASE-GSC-11095-1] c14 N72-10375  
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[NASA-CASE-NPO-13402-1] c37 N76-18457

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controlling transverse instability during  
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[NASA-CASE-XMP-03498] c15 N71-15986  
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[NASA-CASE-NPO-10118] c07 N71-24741  
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[NASA-CASE-GSC-10087-4] c07 N73-20174  
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[NASA-CASE-XLA-00210] c30 N70-40309  
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[NASA-CASE-XGS-02607] c31 N71-23009  
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[NASA-CASE-XAC-06029-1] c31 N71-24813  
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[NASA-CASE-XNP-02389] c07 N71-28900  
Satellite aided vehicle avoidance system  
[NASA-CASE-ERC-10419-1] c03 N75-30132
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[NASA-CASE-IAC-00060] c09 N70-39915
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[NASA-CASE-XGS-08266] c14 N69-27432  
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[NASA-CASE-NPO-10743] c08 N72-21199
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[NASA-CASE-XGS-01331] c14 N71-22996  
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[NASA-CASE-XNP-04819] c08 N71-23295
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[NASA-CASE-LAR-10523-1] c14 N72-22444
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[NASA-CASE-XLE-02428] c17 N70-33288  
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[NASA-CASE-XLE-00231] c17 N70-38198  
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[NASA-CASE-XLE-00228] c17 N70-38490
- Unfired-ceramic, highly reflective composite insulation for large launch vehicles  
[NASA-CASE-XMP-01030] c18 N70-41583  
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[NASA-CASE-XLE-00106] c15 N71-16076  
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[NASA-CASE-XMP-05279] c18 N71-16124  
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[NASA-CASE-XMP-02964] c14 N71-17659  
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[NASA-CASE-XLE-03925] c18 N71-22894  
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[NASA-CASE-NPO-11190] c03 N71-34044  
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[NASA-CASE-LNW-10424-2-2] c18 N72-25539  
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[NASA-CASE-MPS-20433] c15 N72-28496  
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[NASA-CASE-XLA-00204] c32 N70-36536  
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[NASA-CASE-LAR-10788-1] c31 N73-20880  
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[NASA-CASE-XLE-00143] c14 N70-36618  
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## COMPRESSION LOADS

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## COMPRESSION LOADS

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Gas compression analysis --- for oxygen supply equipment  
[NASA-CASE-MSC-14757-1] c37 N76-13496  
Self-energized plasma compressor  
[NASA-CASE-NPS-22145-2] c75 N76-17951

## COMPUTATION

Apparatus for computing square roots  
[NASA-CASE-XGS-04768] c08 N71-19437

## COMPUTER COMPONENTS

Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits  
[NASA-CASE-INP-01753] c08 N71-22897  
Two-dimensional radiant energy array computers and computing devices --- analog to digital converters  
[NASA-CASE-GSC-11839-3] c60 N76-18804

## COMPUTER GRAPHICS

System for digitizing graphic displays  
[NASA-CASE-NPO-10745] c08 N72-22164

## COMPUTER PROGRAMMING

Encoders designed to generate comma free biorthogonal Reed-Muller type code comprising conversion of 64 6-bit words into 64 32-bit data for communication purposes  
[NASA-CASE-NPO-10595] c10 N71-25917  
Priority interrupt system --- comprised of four registers  
[NASA-CASE-NPO-13067-1] c60 N76-18800

## COMPUTER PROGRAMS

Self testing and repairing computer comprising control and diagnostic unit and rollback points for error correction  
[NASA-CASE-NPO-10567] c08 N71-24633  
Development of computer program for estimating reliability of self-repair and fault-tolerant systems with respect to selected system and mission parameters  
[NASA-CASE-NPO-13086-1] c15 N73-12495  
Development of flight simulator system to show position of joystick displacement  
[NASA-CASE-NPO-11497] c08 N73-25206

## COMPUTER STORAGE DEVICES

Magnetic matrix memory system for nondestructive reading of information contained in matrix  
[NASA-CASE-XMP-05835] c08 N71-12504  
Binary sequence detector with few memory elements and minimized logic circuit complexity  
[NASA-CASE-INP-05415] c08 N71-12505  
Pulsed magnetic core memory element with blocking oscillator feedback for interrogation without loss of digital information  
[NASA-CASE-IGS-03303] c08 N71-18595  
Reliable magnetic core circuit apparatus with application in selection matrices for digital memories  
[NASA-CASE-INP-01318] c10 N71-23033  
Time division multiplexed telemetry transmitting system controlled by programmed memory  
[NASA-CASE-GSC-10131-1] c07 N71-24624  
Serial digital decoder design with square circuit matrix and serial memory storage units  
[NASA-CASE-NPO-10150] c08 N71-24650  
Digital memory system with multiple switch cores for driving each word location  
[NASA-CASE-XNP-01466] c10 N71-26434

Redundant memory for enhanced reliability of digital data processing system  
[NASA-CASE-GSC-10564] c10 N71-29135  
Memory device employing semiconductor and ferroelectric properties of single crystal barium titanate  
[NASA-CASE-ERC-10307] c08 N72-21198  
Shared memory for a fault-tolerant computer  
[NASA-CASE-NPO-13139-1] c60 N76-21914

## COMPUTER SYSTEMS DESIGN

Adaptive voting computer system  
[NASA-CASE-MSC-13932-1] c08 N74-14920

## COMPUTER TECHNIQUES

Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c25 N76-18245  
Apparatus for determining thermophysical properties of test specimens --- processing of analog signals  
[NASA-CASE-LAR-11883-1] c35 N76-18415

## COMPUTERIZED SIMULATION

Integrated time shared instrumentation display for aerospace vehicle simulators  
[NASA-CASE-XLA-01952] c08 N71-12507

## COMPUTERS

Telemetry data unit to form multibit words for use between demodulator and computer  
[NASA-CASE-INP-09225] c09 N69-24333  
Data compression processor for monitoring analog signals by sampling procedure  
[NASA-CASE-NPO-10068] c08 N71-19288  
Communication between computers using two identical communications links  
[NASA-CASE-NPO-11161] c08 N72-25207

## CONCAVITY

Concave grating spectrometer for use in near and vacuum ultraviolet regions  
[NASA-CASE-XGS-01036] c14 N70-40003

## CONCENTRATORS

Concentrator device for controlling direction of solar energy onto energy converters  
[NASA-CASE-XLE-01716] c09 N70-40234  
Thermostatically controlled non-tracking type solar energy concentrator  
[NASA-CASE-NPO-13497-1] c44 N76-14602

## CONDENSATES

Apparatus for determining volatile condensable material present in polymeric products  
[NASA-CASE-INP-09699] c06 N74-24607  
Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c77 N75-20139

## CONDENSERS (LIQUIFIERS)

Condenser-separator for dehumidifying air utilizing sintered metal surface  
[NASA-CASE-XLA-08645] c15 N69-21465  
Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c77 N75-20139

## CONDUCTING FLUIDS

Multiducted electromagnetic pump for conductive liquids  
[NASA-CASE-NPO-10755] c15 N71-27084  
Internally supported flexible duct joint --- device for conducting fluids in high pressure systems  
[NASA-CASE-NPS-19193-1] c37 N75-19686

## CONDUCTIVE HEAT TRANSFER

Measuring conductive heat flow and thermal conductivity of laminar gas stream in cylindrical plug to simulate atmospheric reentry  
[NASA-CASE-XLE-00266] c14 N70-34156  
Space suit body heat exchanger design composed of thermal conductance yarn and liquid coolant loops  
[NASA-CASE-XMS-09571] c05 N71-19439

## CONDUCTORS

Support for flexible conductor cable between drawers or racks holding electronic equipment and cabinet assembly housing drawers or racks  
[NASA-CASE-XMP-07587] c15 N71-18701  
Method for making conductors for ferrite memory arrays --- from pre-formed metal conductors  
[NASA-CASE-LAR-10994-1] c24 N75-13032

## CONES

Black body radiometer design with temperature sensing and cavity heat source cone winding  
[NASA-CASE-XNP-09701] c14 N71-26475

## CONFINEMENT

Observation window for internal gas confining chamber

[NASA-CASE-NPO-10890] c11 N73-12265

**CONICAL BODIES**

Conical valve plug for use with reactive cryogenic fluids  
[NASA-CASE-XLE-00715] c15 N70-34859

Conical reflector antenna with feed approximating line source  
[NASA-CASE-NPO-10303] c07 N72-22127

Characteristics of microwave antenna with conical reflectors to generate plane wave front  
[NASA-CASE-NPO-11661] c07 N73-14130

**CONICAL SHELLS**

Capacitance measuring device for determining flare accuracy on tapered tubes  
[NASA-CASE-XKS-03495] c14 N69-39785

Foldable, double cone and parabolic reflector system for solar ray concentration  
[NASA-CASE-XLA-04622] c03 N70-41580

Rotary spindle lathe attachments for machining geometrical cones  
[NASA-CASE-XMS-04292] c15 N71-22722

**CONNECTORS**

Expanding and contracting connector strip for solar cell array of Nimbus satellite  
[NASA-CASE-XGS-01395] c03 N69-21539

Design and development of quick release connector  
[NASA-CASE-XLA-01141] c15 N71-13789

Development and characteristics of strainer for flared tube fitting  
[NASA-CASE-XLA-05056] c15 N72-11389

Process for making RF shielded cable connector assemblies and resulting structures  
[NASA-CASE-GSC-11215-1] c09 N73-28083

Percutaneous connector device --- for transporting external electrical signals to internal body parts  
[NASA-CASE-KSC-10849-1] c54 N76-19816

**CONSCIOUSNESS**

Development of apparatus and method for quantitatively measuring brain activity as automatic indication of sleep state and level of consciousness  
[NASA-CASE-MSC-13282-1] c05 N71-24729

**CONSTRAINTS**

Three stage motion restraining mechanism for restraining and damping three dimensional vibrational movement of gimballed package during launch of spacecraft  
[NASA-CASE-GSC-10306-1] c15 N71-24694

Cable guide and restraint device for reefing tubes in uniform manner  
[NASA-CASE-LAR-10129-1] c15 N73-25512

Development of restraint system for securing personnel to ergometer while exercising under weightless conditions  
[NASA-CASE-MFS-21046-1] c14 N73-27377

Reefing system  
[NASA-CASE-LAR-10129-2] c15 N74-20063

**CONSTRUCTION MATERIALS**

Apparatus and method of assembling building blocks by folding pre-cut flat sheets of material during on-site construction  
[NASA-CASE-MSC-12233-1] c15 N72-25454

Development of construction block in form of container folded from flat sheet and filled with solid material for architectural purposes  
[NASA-CASE-MSC-12233-2] c32 N73-13921

**CONTACT POTENTIALS**

Lightweight, rugged, inexpensive satellite battery for producing electrical power from ionosphere using electrodes with different contact potentials  
[NASA-CASE-XGS-01593] c03 N70-35408

**CONTAINERS**

Manufacture of fluid containers from fused coated polyester sheets having resealable septum  
[NASA-CASE-NPO-10123] c15 N71-24835

Method for locating leaks in hermetically sealed containers  
[NASA-CASE-ERC-10045] c15 N71-24910

Quantitative liquid measurements in container by resonant frequencies  
[NASA-CASE-XNP-02500] c18 N71-27397

**CONTAMINANTS**

Fluid transferring system design for purging toxic, corrosive, or noxious fluids and fumes from materials handling equipment for cleansing and accident prevention  
[NASA-CASE-XMS-01905] c12 N71-21089

**CONTAMINATION**

Emission spectroscopy method for contamination monitoring of inert gas metal arc welding  
[NASA-CASE-XNP-02039] c15 N71-15871

Contamination free separation nut eliminating combustion products from ambient surroundings generated by squib firing  
[NASA-CASE-XGS-01971] c15 N71-15922

Apparatus and process for volumetrically dispensing reagent quantities of volatile chemicals for small batch reactions  
[NASA-CASE-NPO-10070] c15 N71-27372

Portable tester for monitoring bacterial contamination by adenosine triphosphate light reaction  
[NASA-CASE-GSC-10879-1] c14 N72-25413

Manufacture of glass-to-metal seals wherein the cleanliness of the process is enhanced and the leak resistance of the resulting seal is maximized  
[NASA-CASE-LAR-11563-1] c37 N76-21558

**CONTINUOUS WAVE LASERS**

High power laser apparatus and system  
[NASA-CASE-XLE-2529-2] c36 N75-27364

**CONTINUOUS WAVE RADAR**

Phase locked loop with sideband rejecting properties in continuous wave tracking radar  
[NASA-CASE-XNP-02723] c07 N70-41680

**CONTOURS**

Describing device for surveying contour of surface using X-Y plotter and traveling transducer  
[NASA-CASE-XLA-08646] c14 N71-17586

Processing system for semiperiodic electrical signals to produce real time contoured display  
[NASA-CASE-MSC-13407-1] c10 N72-20225

**CONTROL**

Valve assembly for controlling simultaneously more than one fluid flow, and having stable qualities under loads  
[NASA-CASE-XMS-05890] c09 N71-23191

Control system for pressure balance device used in calibrating pressure gages  
[NASA-CASE-XNP-04134] c14 N71-23755

**CONTROL BOARDS**

Ionization control system design for monitoring separately located ion gage pressures on vacuum chambers  
[NASA-CASE-XLE-00787] c14 N71-21090

**CONTROL EQUIPMENT**

Stepping motor control apparatus exciting windings in proper time sequence to cause motor to rotate in either direction  
[NASA-CASE-GSC-10366-1] c10 N71-18772

Voltage drift compensation circuit for analog-to-digital converter  
[NASA-CASE-XNP-04780] c08 N71-19687

Development of attitude control system for vertical takeoff aircraft using reaction nozzles displaced from various axes of aircraft  
[NASA-CASE-XAC-08972] c02 N71-20570

Device for controlling rotary potentiometer mounted on aircraft steering wheel or aileron control  
[NASA-CASE-XAC-10019] c15 N71-23809

Controlled release device for use in launching rockets or missiles  
[NASA-CASE-XKS-03338] c15 N71-24043

Circuits for controlling reversible dc motor  
[NASA-CASE-XNP-07477] c09 N71-26092

Digital memory system with multiple switch cores for driving each word location  
[NASA-CASE-XNP-01466] c10 N71-26434

Fluid control jet amplifiers  
[NASA-CASE-XLE-09341] c12 N71-28741

System for control of variable signal generator  
[NASA-CASE-NPO-11064] c07 N72-11150

Solid state remote circuit selector switching circuit  
[NASA-CASE-LEW-10387] c09 N72-22201

Development of device for simulating charge and discharge cycle of battery in synchronous orbit  
[NASA-CASE-GSC-11211-1] c03 N72-25020

Bridge-type gain control circuit  
[NASA-CASE-GSC-10786-1] c10 N72-28241

Interferometer prism and control system for precisely determining direction to remote light source  
[NASA-CASE-ARC-10278-1] c14 N73-25463

## CONTROL ROCKETS

## SUBJECT INDEX

- Digital controller for a Baum folding machine  
--- providing automatic counting and machine  
shutoff  
[NASA-CASE-LAR-10688-1] c15 N74-21056  
Flow control valve --- for high temperature fluids  
[NASA-CASE-NPO-11951-1] c15 N74-21065  
Inrush current limiter --- control circuit  
[NASA-CASE-GSC-11789-1] c33 N75-16748  
Variable ratio mixed-mode bilateral master-slave  
control system for shuttle remote manipulator  
system  
[NASA-CASE-MSC-14245-1] c18 N75-27041  
Control for nuclear thermionic power source ---  
power supply circuits, energy policy  
[NASA-CASE-NPO-13114-2] c44 N76-15573  
Transonic and supersonic aircraft wherein the  
problems of roll control at high angles of  
attack are minimized  
[NASA-CASE-LAR-11868-1] c08 N76-19159
- CONTROL ROCKETS**  
Unit for generating thrust from catalytic  
decomposition of hydrogen peroxide, for high  
altitude aircraft or spacecraft reaction control  
[NASA-CASE-XMS-00583] c28 N70-38504
- CONTROL RODS**  
Nuclear reactor control rod assembly with  
improved driving mechanism  
[NASA-CASE-XLE-00298] c22 N70-34501  
Manual control mechanism for adjusting control  
rod to null position  
[NASA-CASE-XLA-01808] c15 N71-20740
- CONTROL STABILITY**  
Design and development of active control system  
for air cushion vehicle to reduce or eliminate  
effects of excessive vertical vibratory  
acceleration  
[NASA-CASE-LAR-10531-1] c02 N73-13023
- CONTROL SURFACES**  
Conical valve plug for use with reactive  
cryogenic fluids  
[NASA-CASE-XLE-00715] c15 N70-34859  
Attitude control system for spacecraft based on  
conversion of incident solar radiation on  
movable control surfaces into mechanical torques  
[NASA-CASE-XNP-02982] c31 N70-41855
- CONTROL UNITS (COMPUTERS)**  
Self testing and repairing computer comprising  
control and diagnostic unit and rollback  
points for error correction  
[NASA-CASE-NPO-10567] c08 N71-24633
- CONTROL VALVES**  
Electromechanical actuator and its use in rocket  
thrust control valve  
[NASA-CASE-XNP-05975] c15 N69-23185  
Multiple orifice fluid flow control valve to  
provide different flow patterns  
[NASA-CASE-ERC-10208] c15 N70-10867  
Conical valve plug for use with reactive  
cryogenic fluids  
[NASA-CASE-XLE-00715] c15 N70-34859  
Control valve and coaxial variable injector for  
controlling bipropellant mixture ratio and flow  
[NASA-CASE-XNP-09702] c15 N71-17654  
Control valve for switching main stream of fluid  
from one stable position to another by means  
of electrohydrodynamic forces  
[NASA-CASE-NPO-10416] c12 N71-27332  
Force balanced throttle valve for fuel control  
in rocket engines  
[NASA-CASE-NPO-10808] c15 N71-27432  
Dual stage check valve for cryogenic supply  
systems used in space flight environmental  
control system  
[NASA-CASE-MSC-13587-1] c15 N73-30459  
Airflow control system for supersonic inlets  
[NASA-CASE-LEW-11188-1] c02 N74-20646  
Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c37 N75-25185
- CONTROLLED ATMOSPHERES**  
Rectangular electric conductors for conductor  
cables to withstand spacecraft vibration and  
controlled atmosphere  
[NASA-CASE-MPS-14741] c09 N70-20737  
High voltage pulse generator for testing flash  
and ignition limits of nonmetallic materials  
in controlled atmospheres  
[NASA-CASE-MSC-12178-1] c09 N71-13518  
System for continuous monitoring of exhalations,  
weighing, and cage cleaning for animal exposed  
to controlled atmosphere for toxic study  
[NASA-CASE-XAC-05333] c11 N71-22875
- CONTROLLERS**  
Unitary three-axis controller for flight  
vehicles within or outside atmosphere  
[NASA-CASE-IPR-00181] c21 N70-33279  
Two axis flight controller with potentiometer  
control shafts directly coupled to rotatable  
ball members  
[NASA-CASE-IPR-04104] c03 N70-42073  
Hand controller operable about three  
respectively perpendicular axes and capable of  
actuating signal generators for attitude  
control devices  
[NASA-CASE-XMS-07487] c15 N71-23255  
Solid state controller three axes controller  
[NASA-CASE-MSC-12394-1] c03 N74-10942
- CONVECTIVE FLOW**  
Design and development of device to prevent  
geysering during convective circulation of  
cryogenic fluids  
[NASA-CASE-KSC-10615] c15 N73-12486
- CONVECTIVE HEAT TRANSFER**  
Thin film gauge --- for measuring convective  
heat transfer rates along test surfaces in  
wind tunnels  
[NASA-CASE-NPO-10617-1] c14 N74-22095
- CONVERGENCE**  
Electrical device for developing converging  
spherical shock waves  
[NASA-CASE-MPS-20890] c14 N72-22439
- CONVERGENT-DIVERGENT NOZZLES**  
Gimballed partially submerged nozzle for solid  
propellant rocket engines for providing  
directional control  
[NASA-CASE-XNP-01544] c28 N70-34162  
Regenerative cooling system for rocket  
combustion chamber using coolant tubes in  
convergent-divergent nozzle  
[NASA-CASE-XLE-04857] c28 N71-23968
- CONVERTERS**  
Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c35 N76-16391
- COOLANTS**  
Simulated fuel assembly-type flow measurement  
apparatus for coolant flow in reactor core  
[NASA-CASE-XLE-00724] c14 N70-34669
- COOLING**  
Microwave power receiving antenna solving heat  
dissipation problems by construction of  
elements as heat pipe devices  
[NASA-CASE-MPS-20333] c09 N71-13486  
Dissipative voltage regulator system for  
minimizing heat dissipation  
[NASA-CASE-GSC-10891-1] c10 N71-26626  
Cooling and radiation protection of ruby lasers  
using copper sulfate solution in alcohol  
[NASA-CASE-MPS-20180] c16 N72-12440
- COOLING SYSTEMS**  
Automatic thermal switch for improving  
efficiency of cooling gases below 40 K  
[NASA-CASE-XNP-03796] c23 N71-15467  
Differential thermopile for measuring cooling  
water temperature rise  
[NASA-CASE-XAC-00812] c14 N71-15598  
Electric power system with circulatory liquid  
coolant cooling system  
[NASA-CASE-MPS-14114-2] c09 N71-24807  
Portable cryogenic cooling system design  
including turbine pump, cooling chamber, and  
atomizer  
[NASA-CASE-NPO-10467] c23 N71-26654  
Development and characteristics of natural  
circulation radiator for use with nuclear  
power plants installed in lunar space stations  
[NASA-CASE-XHQ-03673] c33 N71-29046  
Development and characteristics of cooling  
system to maintain temperature of rack mounted  
electronic modules  
[NASA-CASE-MSC-12389] c33 N71-29052  
Development of method for cooling high  
temperature wall members with cooling medium  
having high heat absorption capability  
[NASA-CASE-HQN-00938] c33 N71-29053  
Apparatus for liquid spray cooling of turbine  
blades  
[NASA-CASE-XLE-00027] c33 N71-29152  
Radial heat flux transformer for use in heating  
and cooling processes

[NASA-CASE-NPO-10828] c33 N72-17948  
 Light shield and cooling apparatus --- high  
 intensity ultraviolet lamp  
 [NASA-CASE-LAR-10089-1] c15 N74-23066  
 Heat exchanger --- rocket combustion chambers  
 and cooling systems  
 [NASA-CASE-LEW-12252-1] c34 N75-19579  
 Cryostat system for temperatures on the order of  
 2 deg K or less  
 [NASA-CASE-NPO-13459-1] c31 N75-29277  
 Refrigerated coaxial coupling --- for microwave  
 equipment  
 [NASA-CASE-NPO-13504-1] c33 N75-30430  
 Tubular sublimator/evaporator heat sink  
 [NASA-CASE-ARC-10912-1] c44 N76-13599  
 Rocket chamber and method of making  
 [NASA-CASE-LEW-11118-2] c20 N76-14191  
 Closed loop spray cooling apparatus --- for  
 particle accelerator targets  
 [NASA-CASE-LEW-11981-1] c37 N76-20486

**COORDINATES**  
 Mechanical coordinate converter for use with  
 spacecraft tracking antennas  
 [NASA-CASE-XNP-00614] c14 N70-36907  
 System for locating lightning strokes by  
 coordination of directional antenna signals  
 [NASA-CASE-KSC-10729-1] c09 N73-32110

**COPOLYMERS**  
 Method for producing alternating ether-siloxane  
 copolymers with stable properties when exposed  
 to elevated temperatures and UV radiation  
 [NASA-CASE-XNP-02584] c06 N71-20905  
 Preparation of dicyanoacetylene and vinylidene  
 copolymers using organic compounds  
 [NASA-CASE-XNP-03250] c06 N71-23500

**COPPER**  
 Development of method for etching copper  
 [NASA-CASE-IGS-06306] c17 N71-16044  
 Method of plating copper on aluminum to permit  
 conventional soldering of structural aluminum  
 bodies  
 [NASA-CASE-XLA-08966-1] c17 N71-25903  
 Brazing alloy composition  
 [NASA-CASE-XNP-06053] c26 N75-27126

**COPPER ALLOYS**  
 A zirconium modified nickel-copper alloy  
 [NASA-CASE-LEW-12245-1] c26 N75-26087

**COPPER COMPOUNDS**  
 Gallium arsenide solar cell preparation by  
 surface deposition of cuprous iodide on thin  
 n-type polycrystalline layers and heating in  
 iodine vapor  
 [NASA-CASE-XNP-01960] c09 N71-23027  
 Cooling and radiation protection of ruby lasers  
 using copper sulfate solution in alcohol  
 [NASA-CASE-MPS-20180] c16 N72-12440  
 Brazing alloy  
 [NASA-CASE-XNP-03878] c26 N75-27127

**COPPER FLUORIDES**  
 Method to produce high purity copper fluoride by  
 heating copper hydroxyfluoride powder and  
 subjecting to flowing fluorine gas  
 [NASA-CASE-LEW-10794-1] c06 N72-17093

**CORDAGE**  
 Fabrication of root cord restrained fabric suit  
 sections from sheets of fabric  
 [NASA-CASE-MSC-12398] c05 N72-20098

**CORE STORAGE**  
 Memory device employing semiconductor and  
 ferroelectric properties of single crystal  
 barium titanate  
 [NASA-CASE-ERC-10307] c08 N72-21198

**CORES**  
 Method of making rolling element bearings  
 [NASA-CASE-LEW-11087-2] c15 N74-15128

**CORRECTION**  
 Doppler frequency shift correction device for  
 multiplex communication with Applications  
 Technology Satellites  
 [NASA-CASE-IGS-02749] c07 N69-39978

**CORRELATION DETECTION**  
 Correlation type phase detector --- with time  
 correlation integrator for frequency  
 multiplexed signals  
 [NASA-CASE-GSC-11744-1] c33 N75-26243

**CORRELATORS**  
 Synchronous detection system for detecting weak  
 radio astronomical signals  
 [NASA-CASE-XNP-09832] c30 N71-23723

**CORROSION PREVENTION**

Vapor deposited laminated nitride-silicon  
 coating for corrosion prevention of  
 carbonaceous surfaces  
 [NASA-CASE-XLA-00284] c15 N71-16075  
 Method to prevent stress corrosion cracking in  
 titanium alloys  
 [NASA-CASE-NPO-10271] c17 N71-16393  
 Method and apparatus for inducing compressive  
 stresses in pressure vessel to prevent stress  
 corrosion  
 [NASA-CASE-XLA-07390] c15 N71-18616  
 Development of fluoride coating to prevent  
 oxidation of beryllium surfaces at elevated  
 temperatures  
 [NASA-CASE-LEW-10327] c17 N71-33408  
 Prevention of hydrogen embrittlement of high  
 strength steel by hydrazine compositions ---  
 by adding potassium hydroxide to hydrazine  
 [NASA-CASE-NPO-12122-1] c24 N76-14203

**CORROSION RESISTANCE**

High strength, corrosion resistant cobalt-based  
 alloys for aerospace structures  
 [NASA-CASE-XLE-00726] c17 N71-15644  
 Hydrazine monoperfluoro alkanoate solder flux  
 leaving corrosion resistant coating, for  
 metals such as copper  
 [NASA-CASE-XNP-03459-2] c18 N71-15688  
 High temperature cobalt-base alloy resistant to  
 corrosion by liquid metals and to sublimation  
 in vacuum environment  
 [NASA-CASE-XLE-02991] c17 N71-16025  
 Metal soldering with hydrazine monoperfluoro  
 alkanoate for corrosion resistant coatings  
 [NASA-CASE-XNP-03459] c15 N71-21078

**COSINE SERIES**

Service life of electromechanical device for  
 generating sine/cosine functions  
 [NASA-CASE-LAR-10503-1] c09 N72-21248  
 Function generators for producing complex  
 vibration mode patterns used to identify  
 vibration mode data  
 [NASA-CASE-LAR-10310-1] c10 N73-20253

**COSMIC DUST**

Sensor for detecting and measuring energy,  
 velocity and direction of travel of a cosmic  
 dust particle  
 [NASA-CASE-GSC-10503-1] c14 N72-20381  
 System for detecting impact position of cosmic  
 dust on detector surface  
 [NASA-CASE-GSC-11291-1] c25 N72-33696  
 Impact position detector for outer space particles  
 [NASA-CASE-GSC-11829-1] c35 N75-27331  
 Cosmic dust analyzer  
 [NASA-CASE-MSC-13802-2] c35 N76-15431

**COST REDUCTION**

Low cost solar energy collection system  
 [NASA-CASE-NPO-13579-1] c44 N75-28519

**COUCHES**

Shock absorbing couch for body support under  
 high acceleration or deceleration forces  
 [NASA-CASE-XMS-01240] c05 N70-35152  
 Low onset rate energy absorber in form of strut  
 assembly for crew couch of Apollo command module  
 [NASA-CASE-MSC-12279-1] c15 N70-35679  
 Shock absorbing articulated multiple couch  
 assembly  
 [NASA-CASE-MSC-11253] c05 N71-12343  
 Collapsible couch system for manned space vehicles  
 [NASA-CASE-MSC-13140] c05 N72-11085

**COULOMETERS**

Alkaline-type coulometer cell for primary charge  
 control in secondary battery recharge circuits  
 [NASA-CASE-IGS-05434] c03 N71-20491  
 Development and characteristics of battery  
 charging circuits with coulometer for control  
 of available current  
 [NASA-CASE-GSC-10487-1] c03 N71-24719

**COUNTERS**

Circuit for measuring wide range of pulse rates  
 by utilizing high capacity counter  
 [NASA-CASE-XNP-06234] c10 N71-27137  
 Electronic strain level counter on in-flight  
 aircraft  
 [NASA-CASE-LAR-10756-1] c32 N73-26910

**COUNTING CIRCUITS**

Rocket-borne aspect sensor consisting of  
 radiation sensor, apertured disk, commutator,  
 and counting circuits

## COUPLED MODES

## SUBJECT INDEX

- [NASA-CASE-XGS-08266] c14 N69-27432  
Design of transistorized ring counter circuit with special steering and triggering circuits
- [NASA-CASE-XGS-03095] c09 N69-27463  
Counter-divider circuit for accuracy and reliability in binary circuits
- [NASA-CASE-XMP-00421] c09 N70-34502  
Reversible ring counter using cascaded single silicon controlled rectifier stages
- [NASA-CASE-XGS-01473] c09 N71-10673  
Capacitor sandwich structure containing metal sheets of known thickness for counting penetration rates of meteoroids
- [NASA-CASE-XLE-01246] c14 N71-10797  
Electronic counter circuit utilizing magnetic core and low power consumption
- [NASA-CASE-XNP-08836] c09 N71-12515  
Synchronous counter design incorporating cascaded binary stages driven by previous stages and inputs through NAND gates
- [NASA-CASE-XGS-02440] c08 N71-19432  
Digital cardiometer incorporating circuit for measuring heartbeat rate of subject over predetermined portion of one minute also converting rate to beats per minute
- [NASA-CASE-XMS-02399] c05 N71-22896  
Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits
- [NASA-CASE-XNP-01753] c08 N71-22897  
Noninterruptable digital counter circuit design with display device for pulse frequency modulation
- [NASA-CASE-XNP-09759] c08 N71-24891  
Diode-quad bridge circuit means
- [NASA-CASE-ARC-10364-2(B)] c09 N74-14941  
Frequency measurement by coincidence detection with standard frequency
- [NASA-CASE-MSC-14649-1] c33 N76-16331
- COUPLED MODES**  
Dual mode solid state power switch
- [NASA-CASE-MPS-22880-1] c33 N75-19536
- COUPLING**  
Coupling device for linear shaped charge for space vehicle abort system
- [NASA-CASE-XLA-00189] c33 N70-36846  
Base support for expansible and contractible coupling between two members
- [NASA-CASE-NPO-11059] c15 N72-17454
- COUPLING CIRCUITS**  
Interrogator and current driver circuit for combination with transistor flip-flop circuit
- [NASA-CASE-XGS-03058] c10 N71-19547  
Antenna array at focal plane of reflector with coupling network for beam switching
- [NASA-CASE-GSC-10220-1] c07 N71-27233  
Phase modulator with tuned variable length electrical lines including coupling and varactor diode circuits
- [NASA-CASE-MSC-13201-1] c07 N71-28429  
High efficiency transformerless amplitude modulator coupled to RF power amplifier
- [NASA-CASE-GSC-10668-1] c07 N71-28430  
Automatic quadrature control and measuring system --- using optical coupling circuitry
- [NASA-CASE-MPS-21660-1] c14 N74-21017  
Diode-quad bridge circuit means
- [NASA-CASE-ARC-10364-3] c33 N75-19520  
Rotating joint signal coupler
- [NASA-CASE-LAR-11264-1] c33 N75-27261
- COUPLINGS**  
Releasable coupling device designed to receive and retain matching ends of electrical connectors
- [NASA-CASE-XMS-07846-1] c09 N69-21927  
Stage separation using remote control release of joint with explosive insert
- [NASA-CASE-XLA-02854] c15 N69-27490  
Space vehicle stage coupling and quick release separation mechanism
- [NASA-CASE-XLA-01441] c15 N70-41679  
Standard coupling design for mass production
- [NASA-CASE-XMS-02532] c15 N70-41808  
Quick-release coupling for fueling rocket vehicles with cryogenic propellants
- [NASA-CASE-XKS-01985] c15 N71-10782  
Ratchet mechanism for high speed operation at reduced backlash
- [NASA-CASE-MPS-12805] c15 N71-17805  
Split nut and bolt separation device
- [NASA-CASE-XNP-06914] c15 N71-21489  
Quick disconnect duct coupling device for single-handed operation
- [NASA-CASE-MPS-20395] c15 N71-24903  
Coupling arrangement for isolating torque loads from axial, radial, and bending loads
- [NASA-CASE-XLA-04897] c15 N72-22482  
Refrigerated coaxial coupling --- for microwave equipment
- [NASA-CASE-NPO-13504-1] c33 N75-30430
- COVERINGS**  
Apparatus for ejecting covers of instrument packages using differential pressure principle
- [NASA-CASE-XMP-04132] c15 N69-27502
- CRACKING (FRACTURING)**  
Method to prevent stress corrosion cracking in titanium alloys
- [NASA-CASE-NPO-10271] c17 N71-16393
- CRASH LANDING**  
Aircraft mounted crash activated transmitter device
- [NASA-CASE-MPS-16609-3] c09 N74-34647
- CRREP RUPTURE STRENGTH**  
Nickel base alloy with resistance to oxidation at high temperatures and superior stress-rupture properties
- [NASA-CASE-XLE-02082] c17 N71-16026
- CRITICAL EXPERIMENTS**  
Apparatus and process for volumetrically dispensing reagent quantities of volatile chemicals for small batch reactions
- [NASA-CASE-NPO-10070] c15 N71-27372
- CROSSED FIELDS**  
Crossed-field plasma accelerator for laboratory simulation of atmospheric reentry conditions
- [NASA-CASE-XLA-00675] c25 N70-33267  
Direct conversion of thermal energy into electrical energy using crossed electric and magnetic fields
- [NASA-CASE-XLE-00212] c03 N70-34134  
Crossed field MHD plasma generator-accelerator
- [NASA-CASE-XLA-03374] c25 N71-15562
- CROSSLINKING**  
New trifunctional alcohol derived from trimer acid and novel method of preparation
- [NASA-CASE-NPO-10714] c06 N69-31244  
Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby
- [NASA-CASE-LEW-12053-1] c06 N74-34579
- CRUCIBLES**  
Evaporating crucible of tantalum-tungsten foil, nickel alumina bonding agent and ceramic coating
- [NASA-CASE-XLA-03105] c15 N69-27483
- CRUDE OIL**  
Decontamination of petroleum products with honey
- [NASA-CASE-XNP-03835] c06 N71-23499
- CRYOGENIC EQUIPMENT**  
Gas balancing, cryogenic refrigeration apparatus with Joule-Thomson valve assembly
- [NASA-CASE-NPO-10309] c15 N69-23190  
Low thermal loss piping arrangement for moving cryogenic media through double chamber structure
- [NASA-CASE-XNP-08882] c15 N69-39935  
Method and apparatus for removing plastic insulation from wire using cryogenic equipment
- [NASA-CASE-MPS-10340] c15 N71-17628  
Dual solid cryogenics for spacecraft refrigeration insuring low temperature cooling for extended periods
- [NASA-CASE-GSC-10188-1] c23 N71-24725  
Reliability of automatic refilling valving device for cryogenic liquid systems
- [NASA-CASE-NPO-11177] c15 N72-17453  
Dual stage check valve for cryogenic supply systems used in space flight environmental control system
- [NASA-CASE-MSC-13587-1] c15 N73-30459  
Heat operated cryogenic electrical generator
- [NASA-CASE-NPO-13303-1] c20 N75-24837  
Insulation for piping
- [NASA-CASE-MSC-19523-1] c31 N76-16245  
A device for tensioning test specimens within an hermetically sealed chamber
- [NASA-CASE-MPS-23281-1] c35 N76-18413

## CRYOGENIC FLUID STORAGE

- Apparatus for cryogenic liquid storage with heat transfer reduction and for liquid transfer at zero gravity conditions  
[NASA-CASE-XLE-00345] c15 N70-38020
- Cryogenic storage system for gases onboard spacecraft  
[NASA-CASE-XMS-04390] c31 N70-41871
- Carbon dioxide purge systems to prevent condensation in spaces between cryogenic fuel tanks and hypersonic vehicle skin  
[NASA-CASE-XLA-01967] c31 N70-42015
- Fabrication of filament wound propellant tank for cryogenic storage  
[NASA-CASE-XLE-03803-2] c15 N71-17651
- Prefabricated multilayered self-evacuating insulation panels using gas with low vapor pressure at cryogenic temperatures for application to storage of cryogenics  
[NASA-CASE-XLE-04222] c23 N71-22881
- Multilayer insulation panels for cryogenic liquid containers  
[NASA-CASE-MPS-14023] c33 N71-25351
- Development of thermal insulation material for insulating liquid hydrogen tanks in spacecraft  
[NASA-CASE-XMP-05046] c33 N71-28892
- Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c14 N74-15093

## CRYOGENIC FLUIDS

- Cryogenic flux-gated magnetometer using superconductors  
[NASA-CASE-XAC-02407] c14 N69-27423
- Fuel tank pressure-relief device for venting cryogenic liquid vapors through tubes with porous plug  
[NASA-CASE-XLE-00288] c15 N70-34247
- Conical valve plug for use with reactive cryogenic fluids  
[NASA-CASE-XLE-00715] c15 N70-34859
- Two component valve assembly for cryogenic liquid transfer regulation  
[NASA-CASE-XLE-00397] c15 N70-36492
- Measuring density of single and two-phase cryogenic fluids in rocket fuel tanks  
[NASA-CASE-XLE-00688] c14 N70-41330
- Leakproof soft metal seal for use in very high vacuum systems operating at cryogenic temperatures  
[NASA-CASE-XGS-02441] c15 N70-41629
- High pressure liquid flow sight assembly for wide temperature range applications including cryogenic fluids  
[NASA-CASE-XLE-02998] c14 N70-42074
- Automatic thermal switch for improving efficiency of cooling gases below 40 K  
[NASA-CASE-XNP-03796] c23 N71-15467
- Describing apparatus for separating gas from cryogenic liquid under zero gravity and for venting gas from fuel tank  
[NASA-CASE-XLE-00586] c15 N71-15968
- Development of apparatus for measuring thermal conductivity  
[NASA-CASE-XGS-01052] c14 N71-15992
- Method and apparatus for producing fine particles in cryogenic liquid bath for gelled rocket propellants  
[NASA-CASE-NPO-10250] c23 N71-16212
- Superconducting alternator design with cryogenic fluid for cooling windings below critical temperature  
[NASA-CASE-XLE-02823] c09 N71-23443
- Flow angle sensor and remote readout system for use with cryogenic fluids  
[NASA-CASE-XLE-04503] c14 N71-24864
- Design and development of device to prevent geysering during convective circulation of cryogenic fluids  
[NASA-CASE-RSC-10615] c15 N73-12486
- Magnetocaloric pump --- for cryogenic fluids  
[NASA-CASE-LEW-11672-1] c15 N74-27904

## CRYOGENIC GYROSCOPES

- Cryogenic gyroscope housing --- with annular disks for gas spin-up  
[NASA-CASE-MPS-21136-1] c23 N74-18323

## CRYOGENIC MAGNETS

- Improved alternator with windings of superconducting materials acting as permanent magnet  
[NASA-CASE-XLE-02824] c03 N69-39890

## CRYOGENIC ROCKET PROPELLANTS

- Quick-release coupling for fueling rocket vehicles with cryogenic propellants  
[NASA-CASE-XKS-01985] c15 N71-10782
- Hot-wire liquid level detector for cryogenic propellants  
[NASA-CASE-XLE-00454] c23 N71-17802
- Automatically reciprocating, high pressure pump for use in spacecraft cryogenic propellants  
[NASA-CASE-XNP-04731] c15 N71-24042

## CRYOGENIC STORAGE

- Light weight plastic foam thermal insulation for cryogenic storage  
[NASA-CASE-XLE-02647] c18 N71-23658
- Development of foam insulation for filament wound cryogenic storage tank  
[NASA-CASE-XLE-03803] c15 N71-23816

## CRYOGENICS

- High strength aluminum casting alloy for cryogenic applications in aerospace engineering  
[NASA-CASE-XMP-02786] c17 N71-20743
- Portable cryogenic cooling system design including turbine pump, cooling chamber, and atomizer  
[NASA-CASE-NPO-10467] c23 N71-26654

## CRYOLITE

- Ultraviolet filter of thorium fluoride and cryolite on quartz base  
[NASA-CASE-XNP-02340] c23 N69-24332

## CRYOSTATS

- Cryostat for flexure fatigue testing of composite materials  
[NASA-CASE-XMP-02964] c14 N71-17659
- Cryostat for use with horizontal fatigue testing machines at low temperatures  
[NASA-CASE-XMP-10968] c14 N71-24234
- Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c14 N74-15093
- Cryostat system for temperatures on the order of 2 deg K or less  
[NASA-CASE-NPO-13459-1] c31 N75-29277

## CRYSTAL FILTERS

- Infrared tunable dye laser with nonlinear wavelength mixing crystal in optical cavity  
[NASA-CASE-ARC-10463-1] c09 N73-32111

## CRYSTAL GROWTH

- Device for producing high purity silicon carbide on carbon base by hydrogen reduction of silicon tetrachloride  
[NASA-CASE-XLA-02057] c26 N70-40015
- Electrodeposition method for producing crystalline material from dense gaseous medium  
[NASA-CASE-NPO-10440] c15 N72-21466
- Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c09 N74-33740
- Growth of gallium nitride crystals  
[NASA-CASE-LAR-11302-1] c25 N75-13054
- Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c25 N75-26043
- Method of crystallization --- for semiconductor materials used to manufacture electronic components  
[NASA-CASE-MPS-23001-1] c76 N75-32928

## CRYSTAL OSCILLATORS

- Describing crystal oscillator instrument for detecting condensable gas contaminants in vacuum apparatus  
[NASA-CASE-NPO-10144] c14 N71-17701

## CRYSTAL RECTIFIERS

- Turn on current transient limiter for controlling peak current flow in high capacity load  
[NASA-CASE-GSC-10413] c10 N71-26531

## CRYSTAL STRUCTURE

- Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c09 N74-33740
- Soft X-ray laser using crystal channels as distributed feedback cavities --- zeolites  
[NASA-CASE-NPO-13532-1] c36 N75-15973
- Method of growing composites of the type exhibiting the Soret effect --- improve structure of eutectic alloys, crystals  
[NASA-CASE-MPS-22926-1] c25 N75-19380

## CRYSTALLIZATION

- A process for forming a crystalline film --- in weightless environment  
[NASA-CASE-MPS-23226-1] c76 N75-33861

## CRYSTALS

## SUBJECT INDEX

## CRYSTALS

Brushless dc tachometer design with Hall effect crystals and output voltage magnitude proportional to rotor speed  
[NASA-CASE-MPS-20385] c09 N71-24904

## CULTURE TECHNIQUES

Development of variable angle device for positioning test tubes to permit optimum drying of culture medium  
[NASA-CASE-LAR-10507-1] c11 N72-25284  
Automatic inoculating apparatus --- includes movable carriage, drive motor, and swabbing motor  
[NASA-CASE-LAR-11074-1] c51 N75-13502  
Automatic microbial transfer device  
[NASA-CASE-LAR-11354-1] c35 N75-27330

## CURRENT DENSITY

Solid state switching circuit design to increase current capacity of low rated relay contacts  
[NASA-CASE-XNP-09228] c09 N69-27500  
Technique and equipment for sputtering using apertured electrode and pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c17 N73-24569

## CURRENT DISTRIBUTION

Distribution of currents to circuits using electrical adapter  
[NASA-CASE-XLA-01288] c09 N69-21470  
Electron bombardment ion rocket engine with improved propellant introduction system  
[NASA-CASE-XLE-02066] c28 N71-15661  
Reversible current directing circuitry for reversible motor control  
[NASA-CASE-XLA-09371] c10 N71-18724  
Electric circuit for reversing direction of current flow  
[NASA-CASE-XNP-00952] c10 N71-23271  
Load insensitive electrical device --- power converters for supplying direct current at one voltage from a source at another voltage  
[NASA-CASE-XER-11046-2] c09 N74-22864

## CURRENT REGULATORS

Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c09 N69-24318  
Automatic baseline stabilization for ionization detector used in gas chromatograph  
[NASA-CASE-XNP-03128] c10 N70-41991  
Describing magnetic core current switching device for steering bipolar current pulses to memory units  
[NASA-CASE-NPO-10201] c08 N71-18694  
Circuit design for determining amount of photomultiplier tube light detection utilizing variable current source and dark current signals of opposite polarity  
[NASA-CASE-XMS-03478] c14 N71-21040  
Switching series regulator with gating control network  
[NASA-CASE-XMS-09352] c09 N71-23316  
Magnetic current regulator for saturable core transformer  
[NASA-CASE-ERC-10075] c09 N71-24800  
Automatic power supply circuit design for driving inductive loads and minimizing power consumption including solenoid example  
[NASA-CASE-NPO-10716] c09 N71-24892  
Turn on current transient limiter for controlling peak current flow in high capacity load  
[NASA-CASE-GSC-10413] c10 N71-26531  
Current regulating voltage divider design with load current shunting  
[NASA-CASE-MPS-20935] c09 N71-34212  
Circuit for monitoring power supply by ripple current indication  
[NASA-CASE-KSC-10162] c09 N72-11225  
Inrush current limiter --- control circuit  
[NASA-CASE-GSC-11789-1] c33 N75-16748

## CURVATURE

Apparatus and method for spin forming tubular elbows with high strength, uniform thickness, and close tolerances  
[NASA-CASE-XMP-01083] c15 N71-22723  
Two degree inverted flexure from single block of material  
[NASA-CASE-ARC-10345-1] c15 N73-12488

## CURVE FITTING

Simulating voltage-current characteristic curves of solar cell panel with different operational

## parameters

[NASA-CASE-XMS-01554] c10 N71-10578

## CURVED PANELS

Fabrication of curved reflector segments for solar mirror  
[NASA-CASE-XLE-08917] c15 N71-15597  
Method and apparatus for bowing of instrument panels to improve radio frequency shielded enclosure  
[NASA-CASE-XNP-09422] c07 N71-19436  
Space erectable rollup solar array of arcuate solar panels furled on tapered drum for spacecraft storage during launch  
[NASA-CASE-NPO-10188] c03 N71-20273  
Forming mold for polishing and machining curved solar magnesium reflector with reinforcing ribs  
[NASA-CASE-XLE-08917-2] c15 N71-24836

## CUTTERS

Description of device for aligning stacked sheets of paper for repetitive cutting  
[NASA-CASE-XMS-04178] c15 N71-22798  
Portable cutting machine for piping weld preparation  
[NASA-CASE-XKS-07953] c15 N71-26134  
Precision surface cutter for screen circuit negatives and other microcircuits  
[NASA-CASE-XLA-09843] c15 N72-27485  
Insert facing tool --- manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MPS-21485-1] c15 N74-25968  
Grinding arrangement for ball nose milling cutters  
[NASA-CASE-LAR-10450-1] c15 N74-27905  
Ophthalmic liquifaction pump  
[NASA-CASE-LEW-12051-1] c52 N75-33640

## CUTTING

Ellipsograph for describing and cutting ellipses with minimal axial dimensions  
[NASA-CASE-XLA-03102] c14 N71-21079  
Precision alignment apparatus for cutting a workpiece  
[NASA-CASE-LAR-11658-1] c37 N76-13494

## CYCLES

Pneumatic system for cyclic control of fluid flow in pneumatic device  
[NASA-CASE-XMS-04843] c03 N69-21469  
Multistage feedback shift register with states decomposable into cycles of equal length  
[NASA-CASE-NPO-11082] c08 N72-22167

## CYCLIC HYDROCARBONS

Para-benzoguinone dioxime and concentrated mineral acid processed to yield intumescent or fire resistant, heat insulating materials  
[NASA-CASE-ARC-10304-1] c18 N73-26572

## CYCLIC LOADS

Automatic controlled thermal fatigue testing apparatus  
[NASA-CASE-XLA-02059] c33 N71-24276  
Development of device for simulating cyclic thermal loading of flexible materials by application of mechanical stresses and deformations  
[NASA-CASE-LAR-10270-1] c32 N72-25877  
Material testing system with load sensor for applying and measuring cyclic tensile and compressive loads to test specimens  
[NASA-CASE-MPS-20673] c14 N73-20476

## CYCLOTRON RADIATION

Apparatus for producing high purity I-123 from Xe-123 by bombarding tellurium target with cyclotron beam  
[NASA-CASE-LEW-10518-2] c24 N72-28714

## CYLINDRICAL ANTENNAS

Variable beamwidth antenna --- with multiple beam, variable feed system  
[NASA-CASE-GSC-11862-1] c32 N76-18295

## CYLINDRICAL BODIES

Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c14 N74-20009

## D

## DAMPING

Dynamic precession damping of spin-stabilized vehicles by using rate gyroscope and angular accelerometer  
[NASA-CASE-XLA-01989] c21 N70-34295  
Slosh damping method for liquid rocket propellant tanks



- [NASA-CASE-XMP-00658] c12 N70-38997  
Utilization of momentum devices for forming attitude control and damping system for spacecraft
- [NASA-CASE-XLA-02551] c21 N71-21708  
Three stage motion restraining mechanism for restraining and damping three dimensional vibrational movement of gimballed package during launch of spacecraft
- [NASA-CASE-GSC-10306-1] c15 N71-24694  
Mutation damper for use on spinning body
- [NASA-CASE-GSC-11205-1] c15 N73-25513  
Development of electrical circuit for suppressing oscillations across inductor operating in resonant mode
- [NASA-CASE-ERC-10603-1] c10 N73-26228
- DATA ACQUISITION**
- Conversion system for increasing resolution of analog to digital converters
- [NASA-CASE-XAC-00404] c08 N70-40125  
Development of telemetry system for position location and data acquisition
- [NASA-CASE-GSC-10083-1] c30 N71-16090  
Data acquisition system for converting displayed analog signal to digital values
- [NASA-CASE-NPO-10344] c10 N71-26544  
Data acquisition and processing system with buffer storage and timing device for magnetic tape recording of PCM data and timing information
- [NASA-CASE-NPO-12107] c08 N71-27255  
Simultaneous acquisition of tracking data from two stations
- [NASA-CASE-NPO-13292-1] c32 N75-15854
- DATA COLLECTION PLATFORMS**
- Remote platform power conserving system
- [NASA-CASE-GSC-11182-1] c15 N75-13007
- DATA COMPRESSION**
- Minimum time delay unit for conventional time multiplexed data compression channels
- [NASA-CASE-XNP-08832] c08 N71-12506  
Data compression processor for monitoring analog signals by sampling procedure
- [NASA-CASE-NPO-10068] c08 N71-19288  
Wide range analog data compression system
- [NASA-CASE-XGS-02612] c08 N71-19435  
Apparatus with summing network for compression of analog data by decreasing slope threshold sampling
- [NASA-CASE-NPO-10769] c08 N72-11171  
Data reduction and transmission system for TV PCM data
- [NASA-CASE-NPO-11243] c07 N72-20154  
Gated compressor, distortionless signal limiter
- [NASA-CASE-NPO-11820-1] c07 N74-19788  
Space communication system for compressed data with a concatenated Reed Solomon-Viterbi coding channel
- [NASA-CASE-NPO-13545-1] c32 N75-26207
- DATA CONVERTERS**
- Logarithmic converter for compressing 19-digit binary input number to 8-digit output
- [NASA-CASE-XLA-00471] c08 N70-34778  
Mechanical coordinate converter for use with spacecraft tracking antennas
- [NASA-CASE-XNP-00614] c14 N70-36907  
Analog signal to discrete time converter
- [NASA-CASE-ERC-10048] c09 N72-25251  
Digital converter for scaling binary number to binary coded decimal number of higher multiple
- [NASA-CASE-KSC-10595] c08 N73-12176  
Image data rate converter having a drum with a fixed head and a rotatable head
- [NASA-CASE-NPO-11659-1] c14 N74-11283  
Electronic analog divider
- [NASA-CASE-LEW-11881-1] c33 N75-28316
- DATA LINKS**
- Characteristics of two channel telemetry system with two data rate channels for high and low data rate communication
- [NASA-CASE-NPO-11572] c07 N73-16121  
Automatic accounting system for transfer of data from terminals to computer
- [NASA-CASE-NPO-11456] c08 N73-26176  
Multi-computer multiple data path hardware exchange system
- [NASA-CASE-NPO-13422-1] c60 N76-14818  
Apparatus for simulating optical transmission links
- [NASA-CASE-GSC-11877-1] c74 N76-18913
- DATA MANAGEMENT**
- High speed data monitoring apparatus --- with shift register
- [NASA-CASE-ARC-10899-1] c35 N75-25127
- DATA PROCESSING**
- Data processing and display system for terminal guidance of X-15 aircraft
- [NASA-CASE-XFR-00756] c02 N71-13421  
Encoders designed to generate comma free biorthogonal Reed-Muller type code comprising conversion of 64 6-bit words into 64 32-bit data for communication purposes
- [NASA-CASE-NPO-10595] c10 N71-25917  
Data acquisition and processing system with buffer storage and timing device for magnetic tape recording of PCM data and timing information
- [NASA-CASE-NPO-12107] c08 N71-27255  
Digital data handling circuits for pulse amplifiers
- [NASA-CASE-XNP-01068] c10 N71-28739  
Synchronized digital communication system
- [NASA-CASE-XNP-03623] c09 N73-28084  
Image data rate converter having a drum with a fixed head and a rotatable head
- [NASA-CASE-NPO-11659-1] c14 N74-11283
- DATA PROCESSING EQUIPMENT**
- Data processor having multiple sections activated at different times by selective power coupling to sections
- [NASA-CASE-XGS-04767] c08 N71-12494  
Development of demodulation system for removing amplitude modulation from two quadrature displaced data bearing signals
- [NASA-CASE-XAC-04030] c10 N71-19472  
Development and characteristics of rate augmented digital to analog converter for computed time-dependent data
- [NASA-CASE-XLA-07828] c08 N71-27057  
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[NASA-CASE-GSC-10366-1] c10 N71-18772
- DIFFERENTIAL INTERFEROMETRY**  
Device for determining acceleration of gravity by interferometric measurement of travel of falling body  
[NASA-CASE-XNP-05844] c14 N71-17587
- DIFFERENTIAL PRESSURE**  
Relief valve to permit slow and fast bleeding rates at difference pressure levels  
[NASA-CASE-XMS-05894-1] c15 N69-21924  
Apparatus for ejecting covers of instrument packages using differential pressure principle  
[NASA-CASE-XNP-04132] c15 N69-27502
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[NASA-CASE-ERC-10001] c23 N71-24868
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Digital sensor for counting fringes produced by interferometers with improved sensitivity and one photomultiplier tube to eliminate alignment problem  
[NASA-CASE-LAR-10204] c14 N71-27215
- DIFFRACTOMETERS**  
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[NASA-CASE-XNP-05231] c14 N73-28491
- DIFFUSERS**  
Transmitting and reflecting diffuser  
[NASA-CASE-LAR-10385-3] c23 N73-32538
- DIFFUSION**  
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[NASA-CASE-ERC-10072] c09 N70-11148  
Metallic film diffusion for boundary lubrication in aerospace engineering  
[NASA-CASE-XLE-10337] c15 N71-24046  
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[NASA-CASE-LAR-10385-2] c23 N74-13436
- DIFFUSION PUMPS**  
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[NASA-CASE-GSC-10518-1] c15 N72-22489  
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[NASA-CASE-ARC-10447-1] c05 N74-22771
- DIFFUSION WELDING**  
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[NASA-CASE-GSC-10303] c15 N72-22487  
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[NASA-CASE-MPS-20482] c15 N72-22492  
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[NASA-CASE-LEW-11388-1] c15 N73-32358  
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[NASA-CASE-MSC-14435-1] c37 N76-18455
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[NASA-CASE-XGS-02317] c09 N71-23525  
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[NASA-CASE-LAR-10590-1] c15 N70-26819  
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[NASA-CASE-NPO-10112] c08 N71-12502  
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[NASA-CASE-XNP-05415] c08 N71-12505  
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[NASA-CASE-XKS-08012-2] c31 N71-15566  
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[NASA-CASE-GSC-10564] c10 N71-29135  
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[NASA-CASE-XGS-01812] c07 N71-23001  
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[NASA-CASE-XNP-01318] c10 N71-23033  
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[NASA-CASE-XNP-09759] c08 N71-24891  
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[NASA-CASE-XLA-07732] c08 N71-18751  
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[NASA-CASE-XNP-06957] c14 N71-21088  
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[NASA-CASE-XMS-02399] c05 N71-22896  
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[NASA-CASE-NPO-10851] c07 N71-24613  
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[NASA-CASE-MSC-12458-1] c08 N73-32081
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[NASA-CASE-MFS-10509] c06 N73-30103

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Projection system for display of parallax and perspective  
[NASA-CASE-MFS-23194-1] c74 N76-13909

**DIODES**  
Single electrical circuit component combining diode, fuse, and blown indicator with elongated tube of heat resistant transparent material  
[NASA-CASE-XKS-03381] c09 N71-22796

Maintaining current flow through solar cells with open connection using shunting diode  
[NASA-CASE-XLE-04535] c03 N71-23354

Gunn effect microwave diodes with RF shielding  
[NASA-CASE-ERC-10119] c26 N72-21701

Transistorized switching logic circuits with tunnel diodes  
[NASA-CASE-GSC-10878-1] c10 N72-22236

Development of method and apparatus for detecting surface ions on silicon diodes and transistors  
[NASA-CASE-ERC-10325] c15 N72-25457

Development of temperature compensated light source with components and circuitry for maintaining luminous intensity independent of temperature variations  
[NASA-CASE-ARC-10467-1] c09 N73-14214

Silicon carbide backward diode with coated lead attachment  
[NASA-CASE-ERC-10224-2] c09 N73-27150

Diode-quad bridge circuit means  
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High isolation RF signal selection switches  
[NASA-CASE-NPO-13081-1] c07 N74-22814

Electronic analog divider  
[NASA-CASE-LEW-11881-1] c33 N75-28316

**DIPOLE ANTENNAS**  
Circularly polarized antenna with linearly polarized pair of elements  
[NASA-CASE-ERC-10214] c09 N72-31235

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Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c03 N69-21330

Automatic control of voltage supply to direct current motor  
[NASA-CASE-XMS-04215-1] c09 N69-39987

Thermionic diode switch for use in high temperature region to chop current from dc source  
[NASA-CASE-NPO-10404] c03 N71-12255

Transistorized dc-coupled multivibrator with noninverted output signal  
[NASA-CASE-XNP-09450] c10 N71-18723

Stepping motor control apparatus exciting windings in proper time sequence to cause motor to rotate in either direction  
[NASA-CASE-GSC-10366-1] c10 N71-18772

Frequency control network for current feedback oscillators converting dc voltage to ac or higher dc voltages  
[NASA-CASE-GSC-10041-1] c10 N71-19418

Direct current powered self repeating plasma accelerator with interconnected annular and linear discharge channels  
[NASA-CASE-XLA-03103] c25 N71-21693

Conversion of positive dc voltage to positive dc voltage of lower amplitude  
[NASA-CASE-XMP-14301] c09 N71-23188

Converting output of positive dc voltage source to negative dc voltage across load with common reference point  
[NASA-CASE-XMP-08217] c03 N71-23239

Blood pressure measuring system for separately recording dc and ac pressure signals of Korotkoff sounds  
[NASA-CASE-XMS-06061] c05 N71-23317

Radio frequency coaxial filter to provide dc isolation and low frequency signal rejection in audio range  
[NASA-CASE-XGS-01418] c09 N71-23573

Brushless dc tachometer design with Hall effect crystals and output voltage magnitude proportional to rotor speed  
[NASA-CASE-MFS-20385] c09 N71-24904

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[NASA-CASE-XGS-06226] c10 N71-25950

Circuits for controlling reversible dc motor  
[NASA-CASE-XNP-07477] c09 N71-26092

Feedback control for direct current motor to achieve constant speed under varying loads  
[NASA-CASE-MFS-14610] c09 N71-28886

High dc switch for causing abrupt, cyclic, decreases of current to operate under zero or varying gravity conditions  
[NASA-CASE-LEW-10155-1] c09 N71-29035

Power converters for supplying direct current at one voltage from source at another voltage  
[NASA-CASE-XER-11046] c09 N72-22203

Dc to ac to dc converter with transistor driven synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c09 N72-25253

Direct current motor including stationary field windings and stationary armature winding  
[NASA-CASE-XGS-07805] c15 N72-33476

Powerplexer for distribution of dc power levels to loads which require different voltages  
[NASA-CASE-MSC-12396-1] c03 N73-31988

Bio-isolated dc operational amplifier --- for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c09 N74-21851

Load insensitive electrical device --- power converters for supplying direct current at one voltage from a source at another voltage  
[NASA-CASE-XER-11046-2] c09 N74-22864

**DIRECT POWER GENERATORS**  
Direct conversion of thermal energy into electrical energy using crossed electric and magnetic fields  
[NASA-CASE-XLE-00212] c03 N70-34134

Thermal pump-compressor for converting solar energy  
[NASA-CASE-XLA-00377] c33 N71-17610

Converting output of positive dc voltage source to negative dc voltage across load with common reference point  
[NASA-CASE-XMP-08217] c03 N71-23239

Unsaturating magnetic core transformer design with warning signal for electrical power processing equipment  
[NASA-CASE-ERC-10125] c09 N71-24893

Load insensitive electrical device --- power converters for supplying direct current at one voltage from a source at another voltage  
[NASA-CASE-XER-11046-2] c09 N74-22864

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Mechanical coordinate converter for use with spacecraft tracking antennas  
[NASA-CASE-XNP-00614] c14 N70-36907

Weatherproof helix antenna  
[NASA-CASE-XKS-08485] c07 N71-19493

Tracking antenna system with array for synchronous satellite or ground based radar  
[NASA-CASE-GSC-10553-1] c07 N71-19854

Drive system for parabolic tracking antenna with reversible motion and minimal backlash  
[NASA-CASE-NPO-10173] c15 N71-24696

Variable beamwidth antenna --- with multiple beam, variable feed system  
[NASA-CASE-GSC-11862-1] c32 N76-18295

**DIRECTIONAL CONTROL**  
Gimbaled partially submerged nozzle for solid propellant rocket engines for providing directional control  
[NASA-CASE-XMP-01544] c28 N70-34162

Omnidirectional wheel  
[NASA-CASE-MFS-21309-1] c15 N74-18125

**DIRECTIONAL STABILITY**  
Nose gear steering system for vehicles with main skids to provide directional stability after loss of aerodynamic control  
[NASA-CASE-XLA-01804] c02 N70-34160

System for imposing directional stability on a rocket-propelled vehicle  
[NASA-CASE-MFS-21311-1] c20 N76-21275

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[NASA-CASE-XLA-00326] c03 N70-34667

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Remotely actuated quick disconnect mechanism for umbilical cables  
[NASA-CASE-XLA-00711] c03 N71-12258

Remotely actuated quick disconnect for tubular umbilical conduits used to transfer fluids from ground to rocket vehicle  
[NASA-CASE-XLA-01396] c03 N71-12259

Design and development of quick release connector  
[NASA-CASE-XLA-01141] c15 N71-13789

Split nut and bolt separation device  
[NASA-CASE-INP-06914] c15 N71-21489

Electrical circuit selection device for simulating stage separation of flight vehicle  
[NASA-CASE-XKS-04631] c10 N71-23663

Quick disconnect duct coupling device for single-handed operation  
[NASA-CASE-MPS-20395] c15 N71-24903

Breakaway multiwire electrical cable connector with particular application for umbilical type cables  
[NASA-CASE-NPO-11140] c15 N72-17455

Torsional disconnect device for releasably coupling distal ends of fluid conduits  
[NASA-CASE-NPO-10704] c15 N72-20445

Frangible connecting link suitable for rocket stage separation  
[NASA-CASE-MSC-11849-1] c15 N72-22488

Gas operated quick disconnect coupling for umbilical connectors  
[NASA-CASE-NPO-11202] c15 N72-25450

Quick disconnect filter coupling  
[NASA-CASE-MPS-22323-1] c37 N76-14463

**DISCONTINUITY**

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[NASA-CASE-XLA-08530] c32 N71-25360

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Detector assembly for discriminating first signal with respect to presence or absence of second signal at time of occurrence of first signal  
[NASA-CASE-INP-00701] c09 N70-40272

Difference indicating circuit used in conjunction with device measuring gravitational fields  
[NASA-CASE-INP-08274] c10 N71-13537

Describing frequency discriminator using digital logic circuits and supplying single binary output signal  
[NASA-CASE-MPS-14322] c08 N71-18692

Circuit design for determining amount of photomultiplier tube light detection utilizing variable current source and dark current signals of opposite polarity  
[NASA-CASE-XNS-03478] c14 N71-21040

Characteristics of comparator circuits for comparison of binary numbers in information processing system  
[NASA-CASE-INP-04819] c08 N71-23295

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[NASA-CASE-ARC-10364-3] c33 N75-19520

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Liquid aerosol dispenser with explosively driven piston to compress light gas to extremely high pressure  
[NASA-CASE-MPS-20829] c12 N72-21310

Potable water dispenser  
[NASA-CASE-MPS-21115-1] c05 N74-12779

Lyophilized spore dispenser  
[NASA-CASE-LAR-10544-1] c15 N74-13178

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[NASA-CASE-MPS-21163-1] c05 N74-17853

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[NASA-CASE-ARC-10820-1] c54 N75-32766

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Apparatus for mechanically dispersing ultrafine metal powders subjected to shock waves  
[NASA-CASE-XLE-04946] c17 N71-24911

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Method for producing alkali metal dispersions of high purity  
[NASA-CASE-INP-08876] c17 N73-28573

Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c34 N75-32389

## DISPLACEMENT

Binetallic fluid displacement apparatus --- for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c15 N74-15126

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Null-type vacuum microbalance for measuring minute mechanical displacements  
[NASA-CASE-XAC-00472] c15 N70-40180

Development and characteristics of self-calibrating displacement transducer for measuring magnitude and frequency of displacement of bodies  
[NASA-CASE-XLA-00781] c09 N71-22999

Gas bearing for model support with capacity for measuring angular displacement of model in bearing  
[NASA-CASE-XLA-09346] c15 N71-28740

Method and apparatus for remote measurement of displacement of marks on specimen undergoing tensile test  
[NASA-CASE-NPO-10778] c14 N72-11364

Miniature muscle displacement transducer  
[NASA-CASE-NPO-13519-1] c33 N76-19338

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Integrated time shared instrumentation display for aerospace vehicle simulators  
[NASA-CASE-XLA-01952] c08 N71-12507

Data processing and display system for terminal guidance of X-15 aircraft  
[NASA-CASE-XPR-00756] c02 N71-13421

Fluidic-thermochromic display device  
[NASA-CASE-ERC-10031] c12 N71-18603

Cathode ray tube system for displaying ones and zeros in binary wave train  
[NASA-CASE-XGS-04987] c08 N71-20571

Optical projector system for establishing optimum arrangement of instrument displays in aircraft, spacecraft, other vehicles, and industrial instrument consoles  
[NASA-CASE-INP-03853] c23 N71-21882

Optical monitor panel consisting of translucent screen with test or meter information projected onto it from rear for application in control rooms of missile launching and tracking stations  
[NASA-CASE-XKS-03509] c14 N71-23175

Binary to decimal decoder logic circuit design with feedback control and display device  
[NASA-CASE-XKS-06167] c08 N71-24890

Noninterruptable digital counter circuit design with display device for pulse frequency modulation  
[NASA-CASE-INP-09759] c08 N71-24891

Data acquisition system for converting displayed analog signal to digital values  
[NASA-CASE-NPO-10344] c10 N71-26544

Plasma-fluidic hybrid display system combining high brightness and memory characteristics  
[NASA-CASE-ERC-10100] c09 N71-33519

System for digitizing graphic displays  
[NASA-CASE-NPO-10745] c08 N72-22164

Digital video system for displaying image and alphanumeric data on cathode ray tube  
[NASA-CASE-NPO-11342] c09 N72-25248

Development of apparatus for mounting scientific experiments in spacecraft to permit utilization without maneuvering spacecraft  
[NASA-CASE-MSC-12372-1] c31 N72-25842

Development and characteristics for automatically displaying digits in any desired order using optical techniques  
[NASA-CASE-XKS-00348] c09 N73-14215

Situational display system of cathode ray tubes to assist pilot in aircraft control  
[NASA-CASE-ERC-10350] c14 N73-20474

Device for displaying and recording angled views of samples to be viewed by microscope  
[NASA-CASE-GSC-11690-1] c14 N73-28499

Transparent switchboard which permits optical display devices to be adapted for use in man machine communications  
[NASA-CASE-MSC-13746-1] c10 N73-32143

Recorder/processor apparatus --- for optical data processing  
[NASA-CASE-GSC-11553-1] c07 N74-15831

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[NASA-CASE-MSC-12616-1] c07 N74-32601  
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[NASA-CASE-GSC-11582-1] c33 N75-19517  
Binocular attachment --- for display of  
numerical information in the field of view of  
the binoculars  
[NASA-CASE-LAR-11782-1] c35 N75-30516  
Full color hybrid display for aircraft simulators  
[NASA-CASE-ARC-10903-1] c09 N76-10148  
Projection system for display of parallax and  
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[NASA-CASE-MPS-23194-1] c74 N76-13909  
**DISSIPATION**  
Dissipative voltage regulator system for  
minimizing heat dissipation  
[NASA-CASE-GSC-10891-1] c10 N71-26626  
**DISSOLVING**  
Apparatus for mixing two or more liquids under  
zero gravity conditions  
[NASA-CASE-LAR-10195-1] c15 N73-19458  
**DISTANCE MEASURING EQUIPMENT**  
Binary coded sequential acquisition ranging  
system for distance measurements  
[NASA-CASE-NPO-11194] c08 N72-25209  
Apparatus for determining distance to lighting  
strokes from single station by magnetic and  
electric field sensing antennas  
[NASA-CASE-KSC-10698] c07 N73-20175  
**DISTILLATION EQUIPMENT**  
Utilization of solar radiation by solar still  
for converting salt and brackish water into  
potable water  
[NASA-CASE-XMS-04533] c15 N71-23086  
Purification apparatus for vaporization and  
fractional distillation of liquids  
[NASA-CASE-XNP-08124] c15 N71-27184  
U shaped heated tube for distillation and  
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[NASA-CASE-XNP-08124-2] c06 N73-13129  
**DISTRIBUTED AMPLIFIERS**  
Broadband distribution amplifier with  
complementary pair transistor output stages  
[NASA-CASE-NPO-10003] c10 N71-26415  
**DISTRIBUTORS**  
High voltage distributor  
[NASA-CASE-GSC-11849-1] c33 N76-16332  
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[NASA-CASE-LEW-11286-1] c02 N74-27490  
**DIVIDERS**  
A synchronous binary array divider  
[NASA-CASE-ERC-10180-1] c08 N74-20836  
**DOCUMENT STORAGE**  
Describing device for flagging punched business  
cards  
[NASA-CASE-XLA-02705] c08 N71-15908  
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Design and specifications of emergency escape  
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[NASA-CASE-MSC-12086-1] c05 N71-12345  
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[NASA-CASE-ARC-10444-1] c16 N73-33397

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- [NASA-CASE-MPS-21395-1] c14 N74-26948  
Apparatus for conducting flow electrophoresis in the substantial absence of gravity
- [NASA-CASE-MPS-21394-1] c12 N74-27744
- ELECTROPHOTOMETERS**  
Method and photodetector device for locating abnormal voids in low density materials
- [NASA-CASE-MPS-20044] c14 N71-28993
- ELECTROPHYSIOLOGY**  
Dry electrode design with wire sandwiched between two flexible conductive discs for monitoring physiological responses
- [NASA-CASE-FRC-10029] c09 N71-24618
- ELECTROPLATING**  
Method of plating copper on aluminum to permit conventional soldering of structural aluminum bodies
- [NASA-CASE-XLA-08966-1] c17 N71-25903  
Shielded flat conductor cable fabricated by electroless and electrolytic plating
- [NASA-CASE-MPS-13687] c09 N71-28691  
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- [NASA-CASE-LEW-10920-1] c17 N73-24569
- ELECTROSTATIC CHARGE**  
Charged particle analyzer with periodically varying voltage applied across electrostatic deflection members
- [NASA-CASE-XAC-05506-1] c24 N71-16095  
Electrostatic measurement system --- for contact-electrifying a dielectric
- [NASA-CASE-MPS-22129-1] c33 N75-18477
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- [NASA-CASE-XLB-00817] c28 N70-33265

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# ENERGY ABSORPTION

- Encapsulated heater forming hollow body for cathode used in ion thruster  
[NASA-CASE-LEW-10814-1] c28 N70-35422
- Electrostatic ion engines using high velocity electrons to ionize propellant  
[NASA-CASE-XLE-00376] c28 N70-37245
- Electron bombardment ion rocket engine with improved propellant introduction system  
[NASA-CASE-XLE-02066] c28 N71-15661
- ELECTROSTATIC GENERATORS**
- Electrostatic modulator for communicating through plasma sheath formed around spacecraft during reentry  
[NASA-CASE-XLA-01400] c07 N70-41331
- ELECTROSTATIC PRECIPITATORS**
- Fine particulate capture device  
[NASA-CASE-LEW-11583-1] c15 N74-13199
- ELECTROSTATIC PROBES**
- Low impedance apparatus for measuring electrostatic field intensity near space vehicles  
[NASA-CASE-XLE-00820] c14 N71-16014
- ELECTROSTATIC PROPULSION**
- Nuclear electric generator for accelerating charged propellant particles in electrostatic propulsion system  
[NASA-CASE-XLE-00818] c22 N70-34248
- High voltage insulators for direct current in acceleration system of electrostatic thruster  
[NASA-CASE-XLE-01902] c28 N71-10574
- Electrostatic microthruster propulsion system with annular slit colloid thruster  
[NASA-CASE-GSC-10709-1] c28 N71-25213
- ELECTROSTATICS**
- Controllable high voltage source having fast settling time  
[NASA-CASE-GSC-11844-1] c33 N75-19522
- ELECTROTHERMAL ENGINES**
- Electrothermal rocket engine using resistance heated heat exchanger  
[NASA-CASE-XLE-00267] c28 N70-33356
- High resistance crcss flow heat exchangers for electrothermal rocket engines  
[NASA-CASE-XLE-01783] c28 N70-34175
- ELEVATION**
- Tracking mount for laser telescope employed in tracking large rockets and space vehicles to give information regarding azimuth and elevation  
[NASA-CASE-MFS-14017] c14 N71-26627
- Automatic braking device for rapidly transferring humans or materials from elevated location  
[NASA-CASE-XKS-07814] c15 N71-27067
- ELEVATORS (LIFTS)**
- Centrifuge mounted motion simulator with elevator mechanism  
[NASA-CASE-XAC-00399] c11 N70-34815
- Guide member for stabilizing cable of open shaft elevator  
[NASA-CASE-KSC-10513] c15 N72-25453
- ELEVONS**
- Supersonic or hypersonic vehicle control system comprising elevons with hinge line sweep and free of adverse aerodynamic cross coupling  
[NASA-CASE-XLA-08967] c02 N71-27088
- ELLIPSES**
- Ellipsograph for describing and cutting ellipses with minimal axial dimensions  
[NASA-CASE-XLA-03102] c14 N71-21079
- ELONGATION**
- Strain gage measurement of elongation due to thermally and mechanically induced stresses  
[NASA-CASE-XGS-04478] c14 N71-24233
- Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c35 N76-13460
- ELUTION**
- Amino acid analysis  
[NASA-CASE-NPO-12130-1] c25 N75-14844
- EMERGENCIES**
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[NASA-CASE-NPO-11307-1] c10 N73-30205
- EMERGENCY BREATHING TECHNIQUES**
- Pulmonary resuscitation method and apparatus with adjustable pressure regulator  
[NASA-CASE-XNS-01115] c05 N70-39922
- EMERGENCY LIFE SUSTAINING SYSTEMS**
- Development and characteristics of inflatable structure to provide escape from orbit for spacecrews under emergency conditions  
[NASA-CASE-XMS-06162] c31 N71-28851
- Three transceiver lunar emergency system to relay voice communication of astronaut  
[NASA-CASE-MFS-21042] c07 N72-25171
- Emergency descent device  
[NASA-CASE-MFS-23074-1] c54 N76-13770
- EMISSION SPECTRA**
- Emission spectroscopy method for contamination monitoring of inert gas metal arc welding  
[NASA-CASE-XMF-02039] c15 N71-15871
- Scattering independent determination of absorption and emission coefficients and radiative equilibrium state  
[NASA-CASE-NPO-13677-1] c35 N75-16791
- EMITTANCE**
- High thermal emittance black surface coatings and process for applying to metal and metal alloy surfaces used in radiative cooling of spacecraft  
[NASA-CASE-XLA-06199] c15 N71-24875
- EMITTERS**
- Inverted geometry transistor for use with monolithic integrated circuit  
[NASA-CASE-ARC-10330-1] c09 N73-32112
- Cesium thermionic converters having lanthanum hexaboride electrodes  
[NASA-CASE-LEW-12038-1] c44 N76-10570
- EMULSIONS**
- Apparatus for obtaining isotropic irradiation on film emulsion from parallel radiation source  
[NASA-CASE-MFS-20095] c24 N72-11595
- ENAMELS**
- Refractory porcelain enamel passive control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c27 N75-27160
- ENCAPSULATING**
- Controlled caging and uncaging mechanism for remote instrument control  
[NASA-CASE-GSC-11063-1] c03 N70-35584
- Development of bacteriostatic conformal coating and methods of application  
[NASA-CASE-GSC-10007] c18 N71-16046
- Flexible, repairable, pottable composition for encapsulating electric connectors  
[NASA-CASE-XGS-05180] c18 N71-25881
- Test chambers with orifice and helium mass spectrometer for detecting leak rate of encapsulated semiconductor devices  
[NASA-CASE-ERC-10150] c14 N71-28992
- Electrically coupled individually encapsulated solar cell matrix  
[NASA-CASE-NPO-11190] c03 N71-34044
- ENCLOSURES**
- Method and apparatus for bowing of instrument panels to improve radio frequency shielded enclosure  
[NASA-CASE-XMF-09422] c07 N71-19436
- ENDOSCOPES**
- Borescope with adjustable hinged telescoping optical system  
[NASA-CASE-MFS-15162] c14 N72-32452
- ENDOTHERMIC REACTIONS**
- Sensor device with switches for measuring surface recession of charring and noncharring ablators  
[NASA-CASE-XLA-01781] c14 N69-39975
- ENEMY PERSONNEL**
- Development of electronic detection system for remotely determining number and movement of enemy personnel  
[NASA-CASE-ARC-10097-2] c07 N73-25160
- ENERGY ABSORPTION**
- Non-reusable kinetic energy absorber for application in soft landing of space vehicles  
[NASA-CASE-XLE-00810] c15 N70-34861
- Low onset rate energy absorber in form of strut assembly for crew couch of Apollo command module  
[NASA-CASE-MSC-12279-1] c15 N70-35679
- Air brake device for absorbing and measuring power from rotating shafts  
[NASA-CASE-XLE-00720] c14 N70-40201
- Design and development of double acting shock absorber for spacecraft docking operations  
[NASA-CASE-XMS-03722] c15 N71-21530
- Nonreusable energy absorbing device comprising ring member with plurality of recesses, cutting members, and guide member mounted in each recess

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- [NASA-CASE-XMP-10040] c15 N71-22877  
Suspended mass oscillation damper based on  
impact energy absorption for damping wind  
induced oscillations of tall stacks, antennas,  
and umbilical towers  
[NASA-CASE-LAR-10193-1] c15 N71-27146  
Energy absorption device in high precision gear  
train for protection against damage to  
components caused by stop loads  
[NASA-CASE-XNP-01848] c15 N71-28959  
Shock absorber for use as protective barrier in  
impact energy absorbing system  
[NASA-CASE-NPO-10671] c15 N72-20443  
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docking large spacecraft  
[NASA-CASE-MPS-20863] c31 N73-26876  
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[NASA-CASE-HQN-10638-1] c15 N73-30460
- ENERGY CONSERVATION**  
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[NASA-CASE-GSC-11182-1] c15 N75-13007
- ENERGY CONVERSION**  
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[NASA-CASE-XNP-00644] c03 N70-36803  
Concentrator device for controlling direction of  
solar energy onto energy converters  
[NASA-CASE-XLE-01716] c09 N70-40234  
Device for converting electromagnetic wave  
energy into electric power  
[NASA-CASE-GSC-11394-1] c09 N73-32109  
Low to high temperature energy conversion system  
--- using ammonia  
[NASA-CASE-NPO-13510-1] c44 N75-16972  
Mechanical thermal motor  
[NASA-CASE-MPS-23062-1] c44 N75-27561  
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[NASA-CASE-NPO-13308-1] c36 N75-30524
- ENERGY CONVERSION EFFICIENCY**  
Vacuum thermionic converter with short-circuited  
triodes and increased electron transmission  
and conversion efficiency  
[NASA-CASE-XLE-01015] c03 N69-39898  
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electrical energy using crossed electric and  
magnetic fields  
[NASA-CASE-XLE-00212] c03 N70-34134  
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electronic amplifiers by power supply switching  
[NASA-CASE-XMS-00945] c09 N71-10798
- ENERGY DISSIPATION**  
Energy dissipating shock absorbing system for  
land payload recovery or vehicle braking  
[NASA-CASE-XLA-00754] c15 N70-34850  
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a controlled rate the force of a moving body  
[NASA-CASE-NPO-13619-1] c37 N75-22748
- ENERGY DISTRIBUTION**  
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density and energy distribution in dielectric  
films  
[NASA-CASE-NPO-13443-1] c76 N76-20994
- ENERGY POLICY**  
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[NASA-CASE-MPS-21628-2] c44 N75-29548  
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power supply circuits, energy policy  
[NASA-CASE-NPO-13114-2] c44 N76-15573  
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policy  
[NASA-CASE-LEW-12159-1] c44 N76-15603  
Hydrogen-rich gas generator  
[NASA-CASE-NPO-13560] c37 N76-18460
- ENERGY SOURCES**  
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parallel and miniature silver oxide button  
cells for initiating pyrotechnic devices on  
spacecraft and rocket vehicles  
[NASA-CASE-LAR-10367-1] c03 N70-26817  
Pulse generator for synchronizing or resetting  
electronic signals without requiring separate  
external source  
[NASA-CASE-XGS-03632] c09 N71-23311  
Controllable high voltage source having fast  
settling time  
[NASA-CASE-GSC-11844-1] c33 N75-19522
- ENERGY STORAGE**  
Switching mechanism with energy stored in coil  
spring  
[NASA-CASE-XGS-00473] c03 N70-38713  
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[NASA-CASE-NPO-11156-2] c33 N75-31331  
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[NASA-CASE-MPS-23051-1] c37 N76-13500
- ENGINE CONTROL**  
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[NASA-CASE-XMP-01096] c10 N71-16030  
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[NASA-CASE-ARC-10456-1] c05 N75-12930
- ENGINE COOLANTS**  
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propellants into combustion chamber of small  
rocket engine  
[NASA-CASE-XLE-00303] c15 N70-36535  
Injector manifold assembly for bipropellant  
rocket engines providing for fuel propellant  
to serve as coolant  
[NASA-CASE-XMP-00148] c28 N70-38710
- ENGINE DESIGN**  
Design and development of gas turbine combustion  
unit with nozzle guide vanes for introducing  
diluent air into combustion gases  
[NASA-CASE-XLE-103477-1] c28 N71-20330  
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of ion engines to form cluster thereby  
increasing efficiency and control by  
decreasing heat radiated to space  
[NASA-CASE-XNP-02923] c28 N71-23081  
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[NASA-CASE-MSC-12561-1] c18 N76-17185  
Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c07 N76-18131  
Fuel combustor  
[NASA-CASE-LEW-12137-1] c20 N76-20215
- ENGINE FAILURE**  
System for monitoring presence of neutrals in  
streams of ions - ion engine control  
[NASA-CASE-XNP-02592] c24 N71-20518
- ENGINE INLETS**  
Variably positioned guide vanes for aerodynamic  
choking  
[NASA-CASE-LAR-10642-1] c28 N74-31270  
Jet engine air intake system  
[NASA-CASE-ARC-10761-1] c07 N75-31108
- ENGINE MONITORING INSTRUMENTS**  
System for monitoring presence of neutrals in  
streams of ions - ion engine control  
[NASA-CASE-XNP-02592] c24 N71-20518
- ENGINE NOISE**  
Variably positioned guide vanes for aerodynamic  
choking  
[NASA-CASE-LAR-10642-1] c28 N74-31270
- ENGINE TESTS**  
Electric propulsion engine test chamber  
[NASA-CASE-XLE-00252] c11 N70-34844
- ENGINEERING DRAWINGS**  
High-temperature, high-pressure spherical  
segment valve  
[NASA-CASE-XAC-00074] c15 N70-34817  
Graphic illustration of lifting body design  
[NASA-CASE-FRC-10063] c01 N71-12217  
Specifications and drawings for semipassive  
optical communication system  
[NASA-CASE-XLA-01090] c07 N71-12389  
Method of making molded electric connector for  
use with flat conductor cables  
[NASA-CASE-XMP-03498] c15 N71-15986
- ENTHALPY**  
Measuring conductive heat flow and thermal  
conductivity of laminar gas stream in  
cylindrical plug to simulate atmospheric reentry  
[NASA-CASE-XLE-00266] c14 N70-34156
- ENVIRONMENT SIMULATION**  
Method and apparatus for applying compressional  
forces to skeletal structure of subject to  
simulate force during ambulatory conditions  
[NASA-CASE-ARC-10100-1] c05 N71-24738  
Gravity environment simulation by locomotion and  
restraint aid for studying manual operation  
performance of astronauts at zero gravity  
[NASA-CASE-ARC-10153] c05 N71-28619
- ENVIRONMENT SIMULATORS**  
Space environment simulator for testing  
spacecraft components under aerospace conditions  
[NASA-CASE-NPO-10141] c11 N71-24964

## ENVIRONMENTAL CONTROL

- Portable environmental control and life support system for astronaut in and out of spacecraft  
[NASA-CASE-XMS-09632-1] c05 N71-11203
- Portable apparatus producing high velocity, annular air column surrounding low velocity, filtered, superclean air central core for industrial clean room environmental control  
[NASA-CASE-XMF-03212] c15 N71-22721
- Development and characteristics of thermal sensitive panel for controlling ratio of solar absorptivity to surface emissivity for space vehicle temperature control  
[NASA-CASE-XLA-07728] c33 N71-22890
- Dual solid cryogenics for spacecraft refrigeration insuring low temperature cooling for extended periods  
[NASA-CASE-GSC-10188-1] c23 N71-24725
- Vibration control of flexible bodies in steady accelerating environment  
[NASA-CASE-LAR-10106-1] c15 N71-27169
- Test chamber for determining decomposition and autoignition of materials used in spacecraft under controlled environmental conditions  
[NASA-CASE-KSC-10198] c11 N71-28629
- Readily assembled universal environment housing for electronic equipment  
[NASA-CASE-KSC-10031] c15 N72-22486
- Environmentally controlled suit for working in sterile chamber  
[NASA-CASE-LAR-10076-1] c05 N73-20137
- Dual stage check valve for cryogenic supply systems used in space flight environmental control system  
[NASA-CASE-MSC-13587-1] c15 N73-30459
- Spacecraft with artificial gravity and earthlike atmosphere  
[NASA-CASE-LEW-11101-1] c31 N73-32750

## ENVIRONMENTAL ENGINEERING

- Thermal control wall panel with application to spacecraft cabins  
[NASA-CASE-XLA-01243] c33 N71-22792

## ENVIRONMENTAL TESTS

- Multisample test chamber for exposing materials to X rays, temperature change, and gaseous conditions and determination of material effects  
[NASA-CASE-XMS-02930] c11 N71-23042
- Space suit using nonflexible material with low leakage and providing protection against thermal extremes, physical punctures, and radiation with high mobility articulation  
[NASA-CASE-XAC-07043] c05 N71-23161
- Flammability test chamber for testing materials in certain predetermined environments  
[NASA-CASE-KSC-10126] c11 N71-24985
- Multiaxes vibration device for making vibration tests along orthogonal axes of test specimen  
[NASA-CASE-MFS-20242] c14 N73-19421

## ENVIRONMENTS

- Hermetically sealed elbow actuator for use in severe environments  
[NASA-CASE-MFS-14710] c09 N72-22195

## ENZYME ACTIVITY

- Use of enzyme hexokinase and glucose to reduce inherent light levels of ATP in luciferase compositions  
[NASA-CASE-XGS-05533] c04 N69-27487
- Enzymatic luminescent bioassay method for determining bacterial levels in urine  
[NASA-CASE-GSC-11092-2] c04 N73-27052

## ENZYMES

- Protein sterilization of firefly luciferase without denaturation  
[NASA-CASE-GSC-10225-1] c06 N73-27086

## EPOXY COMPOUNDS

- Synthesis of siloxane containing epoxy polymers with low dielectric properties  
[NASA-CASE-MFS-13994-1] c06 N71-11240
- Synthesis of siloxane containing epoxide and diamine polymers  
[NASA-CASE-MFS-13994-2] c06 N72-25148

## EPOXY RESINS

- Nonmagnetic hermetically sealed battery case made of epoxy resin and woven glass tape for use with electrochemical cells in spacecraft  
[NASA-CASE-XGS-00886] c03 N71-11053
- Epoxy resin sealing device for electrochemical cells in high vacuum environments  
[NASA-CASE-XGS-02630] c03 N71-22974

- Cold metal hydroforming techniques using epoxy molds for counteracting creep or stretch  
[NASA-CASE-XLE-05641-1] c15 N71-26346
- Miniature electromechanical junction transducer operating on piezofunction effect and utilizing epoxy for stress coupling component  
[NASA-CASE-ERC-10087] c14 N71-27334
- Infusible polymer production from reaction of polyfunctional epoxy resins with polyfunctional aziridine compounds  
[NASA-CASE-NPO-10701] c06 N71-28620
- Method of repairing discontinuity in fiberglass structures  
[NASA-CASE-LAR-10416-1] c18 N74-30001
- Transparent fire resistant polymeric structures  
[NASA-CASE-ARC-10813-1] c27 N76-16230
- A method for fabricating graphite/epoxy laminate from ultrathin laminae  
[NASA-CASE-MFS-23229-1] c24 N76-19231

## EQUILIBRIUM EQUATIONS

- Scattering independent determination of absorption and emission coefficients and radiative equilibrium state  
[NASA-CASE-NPO-13677-1] c35 N75-16791

## EQUIPMENT

- Bimetallic fluid displacement apparatus --- for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c15 N74-15126

## EQUIPMENT SPECIFICATIONS

- Differential pressure cell insensitive to changes in ambient temperature and extreme overload  
[NASA-CASE-XAC-00042] c14 N70-34816
- High-temperature, high-pressure spherical segment valve  
[NASA-CASE-XAC-00074] c15 N70-34817
- Remote-reading torquemeter for use where high horsepower are transmitted at high rotative speeds  
[NASA-CASE-XLE-00503] c14 N70-34818
- Magnetically centered liquid column float  
[NASA-CASE-XAC-00030] c14 N70-34820
- Electric propulsion engine test chamber  
[NASA-CASE-XLE-00252] c11 N70-34844
- Channel-type shell construction for rocket engines and related configurations  
[NASA-CASE-XLE-00144] c28 N70-34860
- Non-reusable kinetic energy absorber for application in soft landing of space vehicles  
[NASA-CASE-XLE-00810] c15 N70-34861
- Slit regulated gas journal bearing  
[NASA-CASE-XNP-00476] c15 N70-38620
- Specifications and drawings for semipassive optical communication system  
[NASA-CASE-XLA-01090] c07 N71-12389
- Stretcher with rigid head and neck support with capability of supporting immobilized person in vertical position for removal from vehicle hatch to exterior also useful as splint stretcher  
[NASA-CASE-XMF-06589] c05 N71-23159
- Development of vortex fluid amplifier for throttling rocket exhaust  
[NASA-CASE-LEW-10374-1] c28 N73-13773
- Simplified technique and device for producing industrial grade synthetic diamonds  
[NASA-CASE-MFS-20698-2] c15 N73-19457
- Anti-buckling fatigue test assembly --- for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c32 N74-19528
- Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c12 N74-27744
- Thermocouple tape --- developed from thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c35 N76-15434

## EQUIPOTENTIALS

- Equipotential space suits utilizing mechanical aids to minimize astronaut energy at bending joints  
[NASA-CASE-LAR-10007-1] c05 N71-11195
- Instrument for measuring potentials on two dimensional electric field plot  
[NASA-CASE-XLA-08493] c10 N71-19421

## ERGOMETERS

- Development of restraint system for securing personnel to ergometer while exercising under weightless conditions

# ERROR ANALYSIS

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[NASA-CASE-MPS-21046-1] c14 N73-27377  
Versatile ergometer with work load control  
[NASA-CASE-MPS-21109-1] c05 N73-27941  
Tilting table for testing human body in variety  
of positions while exercising on ergometer or  
other biomedical devices  
[NASA-CASE-MPS-21010-1] c05 N73-30078  
Pneumatic foot pedal operated fluidic exercising  
device  
[NASA-CASE-MSC-11561-1] c05 N73-32014  
Ergometer calibrator --- for any ergometer  
utilizing rotating shaft  
[NASA-CASE-MPS-21045-1] c35 N75-15932  
**ERROR ANALYSIS**  
Development of computer program for estimating  
reliability of self-repair and fault-tolerant  
systems with respect to selected system and  
mission parameters  
[NASA-CASE-NPO-13086-1] c15 N73-12495  
**ERROR CORRECTING DEVICES**  
Error correction circuitry for binary signal  
channels  
[NASA-CASE-XNP-03263] c09 N71-18843  
Multiplexed communication system design  
including automatic correction of transmission  
errors introduced by frequency spectrum shifts  
[NASA-CASE-XNP-01306] c07 N71-20814  
Description of error correcting methods for use  
with digital data computers and apparatus for  
encoding and decoding digital data  
[NASA-CASE-XNP-02748] c08 N71-22749  
Guide accessories for correctly aligning paper  
in typewriter to correct typographical errors  
[NASA-CASE-MPS-15218-1] c15 N73-31438  
**ERROR DETECTION CODES**  
Self testing and repairing computer comprising  
control and diagnostic unit and rollback  
points for error correction  
[NASA-CASE-NPO-10567] c08 N71-24633  
**ERROR SIGNALS**  
Error correction circuitry for binary signal  
channels  
[NASA-CASE-XNP-03263] c09 N71-18843  
Feedback controller for sampling error signals  
within single control formulation time interval  
[NASA-CASE-GSC-10554-1] c08 N71-29033  
**ERRORS**  
Analog to digital converter using offset voltage  
to eliminate errors  
[NASA-CASE-MSC-13110-1] c08 N72-22163  
**ESCAPE CAPSULES**  
Aerial capsule emergency separation device using  
jettisonable towers  
[NASA-CASE-XLA-00115] c03 N70-33343  
Emergency escape cabin system for launch towers  
[NASA-CASE-XKS-02342] c05 N71-11199  
Spacecraft design with single point aerodynamic  
and hydrodynamic stability for emergency  
transport of men from space station to  
splashdown  
[NASA-CASE-MSC-13281] c31 N72-18859  
**ESCAPE SYSTEMS**  
Design and specifications of emergency escape  
system for spacecraft structures  
[NASA-CASE-MSC-12086-1] c05 N71-12345  
Automatic braking device for rapidly  
transferring humans or materials from elevated  
location  
[NASA-CASE-XKS-07814] c15 N71-27067  
An improved load handling device  
[NASA-CASE-MPS-23233-1] c54 N75-33725  
**ESTERS**  
Fluorinated esters of polycarboxylic acid and  
lubricating compositions for use at extreme  
temperature  
[NASA-CASE-MPS-21040-1] c06 N73-30098  
**ETCHING**  
Reusable masking boot for chemical machining  
operations  
[NASA-CASE-XNP-02092] c15 N70-42033  
Development of method for etching copper  
[NASA-CASE-XGS-06306] c17 N71-16044  
Composition and process for improving definition  
of resin masks used in chemical etching  
[NASA-CASE-XGS-04993] c14 N71-17574  
Etching aluminum alloys with aqueous solution  
containing sulfuric acid, hydrofluoric acid,  
and an alkali metal dischromate for adhesive  
bonding

[NASA-CASE-XNP-02303] c17 N71-23828  
Selective plating of etched circuits without  
removing previous plating  
[NASA-CASE-XGS-03120] c15 N71-24047  
Nickel plating onto etched aluminum castings  
[NASA-CASE-XNP-04148] c17 N71-24830  
Scanning nozzle plating system --- for etching  
or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c15 N74-23065  
**ETHERS**  
Method for producing alternating ether-siloxane  
copolymers with stable properties when exposed  
to elevated temperatures and UV radiation  
[NASA-CASE-XNP-02584] c06 N71-20905  
Chemical synthesis of hydroxy terminated  
perfluoro ethers as intermediates for highly  
fluorinated polyurethane resins  
[NASA-CASE-NPO-10768] c06 N71-27254  
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terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c06 N72-27144  
**ETHYLENE OXIDE**  
Using ethylene oxide in preparation of  
sterilized solid rocket propellants and  
encapsulating materials  
[NASA-CASE-XNP-01749] c27 N70-41897  
Ethylene oxide sterilization and encapsulating  
process for sterile preservation of  
instruments and solid propellants  
[NASA-CASE-XNP-09763] c14 N71-20461  
**EUTECTIC ALLOYS**  
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mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c37 N75-15992  
Method of growing composites of the type  
exhibiting the Soret effect --- improve  
structure of eutectic alloys, crystals  
[NASA-CASE-MPS-22926-1] c25 N75-19380  
**EVACUATING (VACUUM)**  
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[NASA-CASE-XHS-01108] c15 N69-24322  
Sealing evacuation port and evacuating vacuum  
container such as space jackets  
[NASA-CASE-XNP-03290] c15 N71-23256  
Gas leak detection in evacuated systems using  
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[NASA-CASE-ERC-10034] c15 N71-24896  
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tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c31 N75-13111  
**EVAPORATION**  
Evaporating crucible of tantalum-tungsten foil,  
nickel alumina bonding agent, and ceramic  
coating  
[NASA-CASE-XLA-03105] c15 N69-27483  
**EVAPORATIVE COOLING**  
Tubular sublimator/evaporator heat sink  
[NASA-CASE-ARC-10912-1] c44 N76-13599  
**EVAPORATORS**  
Spatter proof evaporant source design for use in  
vacuum deposition of solid thin films on  
substrates  
[NASA-CASE-XNP-06065] c15 N71-20395  
Means of vapor deposition using electric current  
and evaporator filament  
[NASA-CASE-LAR-10541-1] c15 N72-32487  
**EXERCISE (PHYSIOLOGY)**  
Development of restraint system for securing  
personnel to ergometer while exercising under  
weightless conditions  
[NASA-CASE-MPS-21046-1] c14 N73-27377  
Tilting table for testing human body in variety  
of positions while exercising on ergometer or  
other biomedical devices  
[NASA-CASE-MPS-21010-1] c05 N73-30078  
Manual actuator --- for spacecraft exercising  
machines  
[NASA-CASE-MPS-21481-1] c15 N74-18127  
Therapeutic hand exerciser  
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[NASA-CASE-ARC-10917-1] c37 N76-20485  
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jets to reduce velocity, noise, and temperature  
[NASA-CASE-XNP-01813] c28 N70-41582  
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  - [NASA-CASE-ARC-10712-1] c28 N74-33218
- Exhaust flow deflector --- for ducted gas flow
  - [NASA-CASE-LAR-11570-1] c34 N76-18364
- EXHAUST NOZZLES**
  - High thrust annular liquid propellant rocket engine and exhaust nozzle design
    - [NASA-CASE-XLE-00078] c28 N70-33284
  - Exhaust nozzle with afterburning for generating thrust
    - [NASA-CASE-XLA-00154] c28 N70-33374
  - Penshaped, supersonic exhaust nozzle design
    - [NASA-CASE-XLE-00057] c28 N70-38711
  - Automatic ejection valve for attitude control and midcourse guidance of space vehicles
    - [NASA-CASE-XNP-00676] c15 N70-38996
  - Jet aircraft exhaust nozzle for noise reduction
    - [NASA-CASE-LAR-10951-1] c28 N73-19819
- EXPANDABLE STRUCTURES**
  - Expanding and contracting connector strip for solar cell array of Nimbus satellite
    - [NASA-CASE-XGS-01395] c03 N69-21539
  - Method of compactly packaging centrifugally expandable lightweight flexible reflector satellite
    - [NASA-CASE-XLA-00138] c31 N70-37981
  - Foldable conduit capable of springing back as self erecting structural member
    - [NASA-CASE-XLE-00620] c32 N70-41579
  - Collapsible high gain antenna which can be automatically expanded to operating state
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  - Expandable space frames with high expansion to collapse ratio
    - [NASA-CASE-ERC-10365-1] c31 N73-32749
  - Means for accommodating large overstrain in lead wires --- by storing extra length of wire in stretchable loop
    - [NASA-CASE-LAR-10168-1] c09 N74-22865
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  - Apparatus for measuring polymer membrane expansion in electrochemical cells
    - [NASA-CASE-XGS-03865] c14 N69-21363
- EXPERIMENTAL DESIGN**
  - Efficient operation of improved hydrofoil design
    - [NASA-CASE-XLA-00229] c12 N70-33305
  - Sealed electric storage battery with gas manifold interconnecting each cell
    - [NASA-CASE-XNP-03378] c03 N71-11051
  - Electrode attached to helmets for detecting low level signals from skin of living creatures
    - [NASA-CASE-ARC-10043-1] c05 N71-11193
  - Space suit using nonflexible material with low leakage and providing protection against thermal extremes, physical punctures, and radiation with high mobility articulation
    - [NASA-CASE-XAC-07043] c05 N71-23161
- EXPLOSIONS**
  - Device for detection of combustion light preceding gaseous explosions
    - [NASA-CASE-LAR-10739-1] c14 N73-16484
- EXPLOSIVE DEVICES**
  - Stage separation using remote control release of joint with explosive insert
    - [NASA-CASE-XLA-02854] c15 N69-27490
  - Hermetically sealed explosive release mechanism for actuator device
    - [NASA-CASE-XGS-00824] c15 N71-16078
  - Development of non-magnetic indexing device for orienting magnetic flux sensing instrument in magnetic field without generation of detrimental magnetic fields
    - [NASA-CASE-XGS-02422] c15 N71-21529
  - Development of apparatus for detonating explosive devices in order to determine forces generated and detonation propagation rate
    - [NASA-CASE-LAR-10800-1] c33 N72-27959
  - Development and characteristics of squib actuated explosive disconnect for spacecraft release from launch vehicle
    - [NASA-CASE-NPO-11330] c33 N73-26958
- EXPLOSIVE FORMING**
  - Electric discharge apparatus for electrohydraulic explosive forming
    - [NASA-CASE-XMF-00375] c15 N70-34249
- EXPLOSIVE WELDING**
  - Method for eliminating noise and debris of explosive welding techniques by using complete enclosure
    - [NASA-CASE-LAR-10941-2] c15 N73-32371
- Totally confined explosive welding --- apparatus to reduce noise level and protect personnel during explosive bonding
  - [NASA-CASE-LAR-10941-1] c15 N74-21057
- Method of making an explosively welded scarf joint
  - [NASA-CASE-LAR-11211-1] c37 N75-12326
- EXPLOSIVES**
  - Production of intermetallic compounds by effect of shock waves from explosions and compaction of powder
    - [NASA-CASE-MFS-20861-1] c18 N73-32437
  - Optically detonated explosive device
    - [NASA-CASE-NPO-11743-1] c33 N74-27425
- EXPONENTIAL FUNCTIONS**
  - Digital quasi-exponential function generator
    - [NASA-CASE-NPO-11130] c08 N72-20176
- EXPOSURE**
  - Mechanical exposure interlock device for preventing film overexposure in oscilloscope camera
    - [NASA-CASE-LAR-10319-1] c14 N73-32322
- EXPULSION BLADDERS**
  - Expulsion bladder equipped storage tank structure
    - [NASA-CASE-XNP-00612] c11 N70-38182
  - Rubber composition for expulsion bladders and diaphragms for use with hydrazine
    - [NASA-CASE-NPO-11433] c18 N71-31140
- EXTENSIONS**
  - Support for flexible conductor cable between drawers or racks holding electronic equipment and cabinet assembly housing drawers or racks
    - [NASA-CASE-XMF-07587] c15 N71-18701
- EXTENSOMETERS**
  - Transducer frame for use with extensometer to continuously monitor specimen sample
    - [NASA-CASE-XLA-10322] c15 N72-17452
  - Conductive elastomeric extensometer
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  - Amplifying ribbon extensometer
    - [NASA-CASE-LAR-11825-1] c35 N76-13460
- EXTRACTION**
  - Liquid-gas separator adapted for use in zero gravity environment - drawings
    - [NASA-CASE-XMS-01624] c15 N70-40062
- EXTRAVEHICULAR ACTIVITY**
  - Portable environmental control and life support system for astronaut in and out of spacecraft
    - [NASA-CASE-XMS-09632-1] c05 N71-11203
  - Hand-held maneuvering unit for propulsion and attitude control of astronauts in zero or reduced gravity environment
    - [NASA-CASE-XMS-05304] c05 N71-12336
  - Internal and external serpentine devices for performing physical operations around orbital space stations
    - [NASA-CASE-XMF-05344] c31 N71-16345
  - Reusable, pin-type fastener, easily operated during EVA
    - [NASA-CASE-ARC-10140-1] c15 N71-17653
  - Design and development of flexible tunnel for use by spacecrews in performing extravehicular activities
    - [NASA-CASE-MSC-12243-1] c05 N71-24728
  - Open loop life support subsystem using breathing bag as reservoir for EVA
    - [NASA-CASE-MSC-12411-1] c05 N72-20096
  - Intra- and extravehicular life support space suite for Apollo astronauts
    - [NASA-CASE-MSC-12609-1] c05 N73-32012
- EXTREMELY LOW RADIO FREQUENCIES**
  - VHF/UHF parasitic probe antenna for spacecraft communication
    - [NASA-CASE-XKS-09340] c07 N71-24614
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  - Extrusion can for extruding ceramics under heat and pressure
    - [NASA-CASE-NPO-10812] c15 N73-13464
  - Brazing alloy binder
    - [NASA-CASE-XMF-05868] c26 N75-27125
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  - Sight switch using infrared source and sensor mounted beside eye
    - [NASA-CASE-XMF-03934] c09 N71-22985
  - Ultrasonic device for ophthalmic eye surgery with safe removal of macerated material
    - [NASA-CASE-LEW-11669-1] c05 N73-27062
- EYE EXAMINATIONS**
  - Automated visual sensitivity tester for

## EYEPieces

determining visual field sensitivity and blind spot size  
 [NASA-CASE-ARC-10329-1] c05 N73-26072  
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 [NASA-CASE-ARC-10329-2] c05 N74-19761  
 Multiparameter vision testing apparatus  
 [NASA-CASE-MSC-13601-2] c54 N75-27759  
**EYEPieces**  
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 [NASA-CASE-XMS-06056-1] c23 N71-24857

## F

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 [NASA-CASE-XNP-09752] c14 N69-21541  
 Fabrication method for lightweight regeneratively cooled combustion chamber of channel construction  
 [NASA-CASE-XLE-00150] c28 N70-41818  
 Fabrication methods for matrices of solar cell submodules  
 [NASA-CASE-XNP-05821] c03 N71-11056  
 Capacitor fabrication by solidifying mixture of ferromagnetic metal particles, nonferromagnetic particles, and dielectric material  
 [NASA-CASE-LEW-10364-1] c09 N71-13522  
 Method and apparatus for fabricating solar cell panels  
 [NASA-CASE-XNP-03413] c03 N71-26726  
 Fabrication of root cord restrained fabric suit sections from sheets of fabric  
 [NASA-CASE-MSC-12398] c05 N72-20098  
 Method of fabricating equal length insulated wire  
 [NASA-CASE-PRC-10038] c15 N72-20444  
 Development of thin film temperature sensor from TaO  
 [NASA-CASE-NPO-11775] c26 N72-28761  
 Lightweight reflector assembly and method  
 [NASA-CASE-NPO-13707-1] c74 N75-32894  
 A method for fabricating graphite/epoxy laminate from ultrathin laminae  
 [NASA-CASE-MFS-23229-1] c24 N76-19231  
**FABRICS**  
 Fabrication of root cord restrained fabric suit sections from sheets of fabric  
 [NASA-CASE-MSC-12398] c05 N72-20098  
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 [NASA-CASE-LAR-11825-1] c35 N76-13460  
**FABRY-PEROT INTERFEROMETERS**  
 Fabry-Perot interferometer retrodirective reflector modulator for optical communication  
 [NASA-CASE-XGS-04480] c16 N69-27491  
**FACSIMILE COMMUNICATION**  
 Restoration and improvement of demodulated facsimile video signals  
 [NASA-CASE-GSC-10185-1] c07 N72-12081  
 Spectrometer integrated with a facsimile camera  
 [NASA-CASE-LAR-11207-1] c35 N75-19613  
**FACTORY DESIGN**  
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 [NASA-CASE-XLA-05332] c05 N71-11194  
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 [NASA-CASE-LAR-10007-1] c05 N71-11195  
**FAIL-SAFE SYSTEMS**  
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 [NASA-CASE-NPO-11078] c09 N72-25262  
 Latch mechanism  
 [NASA-CASE-MSC-12549-1] c15 N74-27903  
**FAILURE MODES**  
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 [NASA-CASE-LEW-10856-1] c15 N72-22490  
 Inverter ratio failure detector  
 [NASA-CASE-NPO-13160-1] c14 N74-18090  
**FAIRINGS**  
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 [NASA-CASE-GSC-10590-1] c31 N73-14853  
**FALLING SPHERES**  
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 [NASA-CASE-XNP-05844] c14 N71-17587

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## FAR INFRARED RADIATION

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 [NASA-CASE-MFS-20546-2] c14 N73-30389

## FAR ULTRAVIOLET RADIATION

Transient heat transfer gage for measuring total radiant intensity from far ultraviolet and ionized high temperature gases  
 [NASA-CASE-XNP-09802] c33 N71-15641

## FARM CROPS

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 [NASA-CASE-NPO-13567-1] c37 N75-22746

## FASTERERS

Force measuring instrument for structural members, particularly fastening bolts or studs  
 [NASA-CASE-XNP-00456] c14 N70-34705  
 Lightweight life preserver without fastening devices  
 [NASA-CASE-XMS-00864] c05 N70-36493  
 Nut and bolt fastener permitting all-directional movement of skin sections with respect to supporting structure  
 [NASA-CASE-XLA-01807] c15 N71-10799  
 Releasable, pin-type fastener, easily operated during EVA  
 [NASA-CASE-ARC-10140-1] c15 N71-17653  
 Ultrasonic wrench for applying vibratory energy to mechanical fasteners  
 [NASA-CASE-MFS-20586] c15 N71-17686  
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 [NASA-CASE-XNP-04732] c09 N71-20851  
 Design, development, and characteristics of latching mechanism for operation in limited access areas  
 [NASA-CASE-XMS-03745] c15 N71-21076  
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 [NASA-CASE-XNP-02341] c15 N71-21531  
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 [NASA-CASE-XPR-05302] c15 N71-23254  
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 [NASA-CASE-XLA-01027] c31 N71-24035  
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 [NASA-CASE-XMS-10660-1] c15 N71-25975  
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 [NASA-CASE-XLA-08530] c32 N71-25360  
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 [NASA-CASE-XLA-09122] c15 N69-27505  
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 [NASA-CASE-XLE-02999] c15 N71-16052  
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 [NASA-CASE-LEW-10856-1] c15 N72-22490  
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 [NASA-CASE-LEW-11152-1] c15 N73-32359  
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 [NASA-CASE-NPO-13731-1] c39 N76-17427  
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 [NASA-CASE-XNP-10968] c14 N71-24234  
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 [NASA-CASE-XLA-01782] c14 N71-26136  
 A machine for use in monitoring fatigue life for a plurality of elastomeric specimens  
 [NASA-CASE-NPO-13731-1] c39 N76-17427  
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[NASA-CASE-NPO-11609-1] c06 N72-22114
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[NASA-CASE-XMS-06761] c05 N69-23192
- FEED SYSTEMS**  
Nonconductive tube as feed system for plasma thruster  
[NASA-CASE-XLE-02902] c25 N71-21694  
Method and apparatus for pressurizing propellant tanks used in propulsion motor feed system  
[NASA-CASE-XNP-00650] c27 N71-28929  
Pressurized tank for feeding liquid waste into processing equipment  
[NASA-CASE-LAR-10365-1] c05 N72-27102  
Pressurized inert gas feed for lighting system  
[NASA-CASE-KSC-10644] c09 N72-27227  
Dual frequency feed systems for Cassegrainian antennas  
[NASA-CASE-NPO-13091-1] c09 N73-12214  
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[NASA-CASE-NPO-11377] c15 N73-27406
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[NASA-CASE-ARC-10020] c10 N72-47172  
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[NASA-CASE-NPO-11082] c08 N72-22167  
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[NASA-CASE-NPO-10760] c09 N72-25254  
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[NASA-CASE-NPO-13531-1] c36 N75-13243
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[NASA-CASE-MSC-13276-1] c14 N71-27058  
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[NASA-CASE-XNP-01107] c10 N71-28859  
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[NASA-CASE-MSC-13492-1] c10 N71-28860
- FEEDBACK CIRCUITS**  
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[NASA-CASE-XGS-04999] c09 N69-24317  
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[NASA-CASE-NPO-10351] c08 N71-12503  
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[NASA-CASE-GSC-10041-1] c10 N71-19418  
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[NASA-CASE-XAC-10607] c10 N71-23669  
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[NASA-CASE-LAR-10253-1] c09 N72-25258  
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[NASA-CASE-NPO-11406] c08 N73-12175
- FEEDBACK CONTROL**  
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[NASA-CASE-XAC-04031] c08 N71-18594  
Pulsed magnetic core memory element with blocking oscillator feedback for interrogation without loss of digital information  
[NASA-CASE-XGS-03303] c08 N71-18595  
Binary to decimal decoder logic circuit design with feedback control and display device  
[NASA-CASE-XKS-06167] c08 N71-24890  
Feedback control for direct current motor to achieve constant speed under varying loads  
[NASA-CASE-MFS-14610] c09 N71-28886  
Feedback controller for sampling error signals within single control formulation time interval  
[NASA-CASE-GSC-10554-1] c08 N71-29033  
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- [NASA-CASE-NPO-10700] c07 N71-33613  
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[NASA-CASE-LAR-10682-1] c02 N73-26004  
Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10792-1] c09 N74-11049  
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[NASA-CASE-HQN-10880-1] c32 N75-30385  
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[NASA-CASE-NPO-13673-1] c33 N75-32323  
Diffused waveguiding capillary tube with distributed feedback for a gas laser  
[NASA-CASE-NPO-13544-1] c36 N76-18428  
Closed loop spray cooling apparatus --- for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c37 N76-20486
- FEEDBACK FREQUENCY MODULATION**  
Method and apparatus for communicating through ionized layer of gases surrounding spacecraft during reentry into planetary atmospheres  
[NASA-CASE-XLA-01127] c07 N70-41372  
Characteristics of data-aided carrier tracking loop used for tracking carrier in angle modulated communications system  
[NASA-CASE-NPO-11282] c10 N73-16205
- FEEDERS**  
Automatic real-time pair-feeding system for animals  
[NASA-CASE-ARC-10302-1] c04 N74-15778
- FERRITES**  
Magnetic recording head composed of ferrite core coated with thin film of aluminum-iron-silicon alloy  
[NASA-CASE-GSC-10097-1] c08 N71-27210  
Method for making conductors for ferrite memory arrays --- from pre-formed metal conductors  
[NASA-CASE-LAR-10994-1] c24 N75-13032  
Device for measuring the ferrite content in an austenitic stainless-steel weld  
[NASA-CASE-MPS-22907-1] c26 N76-18257
- FERROMAGNETISM**  
High temperature ferromagnetic cobalt-base alloy for electrical power generating equipment  
[NASA-CASE-XLE-03629] c17 N71-23248
- FIBER OPTICS**  
Fiber optic transducers for monitoring and analysis of vibration in aerospace vehicles and onboard equipment  
[NASA-CASE-XNP-02433] c14 N71-10616
- FIBERS**  
Process for fiberizing ceramic materials with high fusion temperatures and tensile strength  
[NASA-CASE-XNP-00597] c18 N71-23088  
Method and apparatus for fluffing, separating, and cleaning fibers  
[NASA-CASE-LAR-11224-1] c37 N76-18456
- FIELD EFFECT TRANSISTORS**  
Frequency to analog converters with unipolar field effect transistor for determining potential charge by pulse duration of input signal  
[NASA-CASE-XNP-07040] c08 N71-12500  
Voltage controlled, variable frequency relaxation oscillator with MOSFET variable current feed  
[NASA-CASE-GSC-10022-1] c10 N71-25882  
Circuitry for high input impedance video processor with high noise immunity  
[NASA-CASE-NPO-10199] c09 N72-17156  
Development and characteristics of data multiplexer circuit using field effect transistors arranged in tree switching configuration  
[NASA-CASE-NPO-11333] c08 N72-22162  
Single integrated circuit chip with field effect transistor  
[NASA-CASE-GSC-10835-1] c09 N72-33205  
Radiation hardening of MOS devices by boron --- for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c24 N74-20329  
Stored charge transistor  
[NASA-CASE-NPO-11156-2] c33 N75-31331

## FIELD EMISSION

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## FIELD EMISSION

Electrode with multiple columnar conductors for limiting field emission current  
[NASA-CASE-ERC-10015-2] c10 N72-27246

## FILAMENT WINDING

Tool attachment for spreading or moving away loose elements from terminal posts during winding of filamentary elements  
[NASA-CASE-XMP-02107] c15 N71-10809  
Fabrication of filament wound propellant tank for cryogenic storage  
[NASA-CASE-XLE-03803-2] c15 N71-17651  
Twisted wire or tube superconductor for filament windings  
[NASA-CASE-LEW-11015] c26 N73-32571  
Improved method of making reinforced composite structures  
[NASA-CASE-LEW-12619-1] c24 N76-16181

## FILAREMENTS

Refractory filament series circuitry for radiant heater  
[NASA-CASE-XLE-00387] c33 N70-34812  
Controlled diffusion reaction process for masking substrate of twisted multifilament superconductive ribbon  
[NASA-CASE-LEW-11726-1] c26 N73-26752

## FILLERS

Filling honeycomb matrix with deaerated paste filler  
[NASA-CASE-XMS-01108] c15 N69-24322

## FILE COOLING

Multislot film cooled pyrolytic graphite rocket nozzle  
[NASA-CASE-XNP-04389] c28 N71-20942

## FILMS

Apparatus for obtaining isotropic irradiation on film emulsion from parallel radiation source  
[NASA-CASE-MFS-20095] c24 N72-11595  
Method and apparatus for measurement of trap density and energy distribution in dielectric films  
[NASA-CASE-NPO-13443-1] c76 N76-20994

## FILTERS

Development of filter system for control of outgas contamination in vacuum conditions using absorbent beds of molecular sieve zeolite, silica gel, and charcoal  
[NASA-CASE-MFS-14711] c15 N71-26185  
Heated tungsten filter for removing oxygen impurities from cesium  
[NASA-CASE-XNP-04262-2] c17 N71-26773  
Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c12 N74-30608

## FINS

Thrust and attitude control apparatus using jet nozzle in movable canard surface or fin configuration  
[NASA-CASE-XLE-03583] c31 N71-17629  
Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c02 N74-30421

## FIRE PREVENTION

Hydrogen fire blink detector for high altitude rocket or ground installation  
[NASA-CASE-MFS-15063] c14 N72-25412  
Method and apparatus for checking fire detectors  
[NASA-CASE-GSC-11600-1] c14 N74-21019

## FIREPROOFING

Fireproof potassium silicate coating composition, insoluble in water after application  
[NASA-CASE-GSC-10072] c18 N71-14014  
Intumescent paint containing nitrile rubber for fire protection  
[NASA-CASE-ARC-10196-1] c18 N73-13562  
Para-benzoguinone dioxime and concentrated mineral acid processed to yield intumescent or fire resistant, heat insulating materials  
[NASA-CASE-ARC-10304-1] c18 N73-26572  
Process for developing flame retardant elastomeric composition textiles for use in space suits  
[NASA-CASE-MSC-14331-1] c18 N73-27501  
Flexible fire retardant polyisocyanate modified neoprene foam --- for thermal protective devices  
[NASA-CASE-ARC-10180-1] c06 N74-12814

## FIRES

Device for generating and controlling combustion products for testing of fire detection system

[NASA-CASE-GSC-11095-1] c14 N72-10375  
Device for detecting hydrogen fires onboard high altitude rockets  
[NASA-CASE-MFS-13130] c10 N72-17173  
**FIRING (IGNITING)**  
Contamination free separation nut eliminating combustion products from ambient surroundings generated by squib firing  
[NASA-CASE-XGS-01971] c15 N71-15922  
**FISSIONABLE MATERIALS**  
Nuclear gaseous reactor for heating working fluid to high temperatures  
[NASA-CASE-XLE-00321] c22 N70-34572  
**FITTINGS**  
Design and development of quick release connector  
[NASA-CASE-XLA-01141] c15 N71-13789  
Development and characteristics of strainer for flared tube fitting  
[NASA-CASE-XLA-05056] c15 N72-11389  
**FIXED WINGS**  
Design of supersonic aircraft with novel fixed, swept wing planform  
[NASA-CASE-XLA-04451] c02 N71-12243  
**FIXTURES**  
Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c15 N74-32918  
Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c37 N76-21554  
**FLAME PROBES**  
Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c03 N74-29410  
**FLAME SPRAYING**  
Flame or plasma spraying for molybdenum coating of carbon or graphite surfaces to prevent oxidative corrosion  
[NASA-CASE-XLA-00302] c15 N71-16077  
Modification of polyurethanes with alkyl halide resins, inorganic salts, and encapsulated volatile and reactive halogen for fuel fire control  
[NASA-CASE-ARC-10098-1] c06 N71-24739  
Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c15 N74-11301  
**FLAMES**  
Anodizing method for providing metal surfaces with temperature reducing coatings against flames  
[NASA-CASE-XLE-00035] c33 N71-29151  
Modulated hydrogen ion flame detector  
[NASA-CASE-ARC-10322-1] c35 N76-18403  
**FLAMMABILITY**  
Flammability test chamber for testing materials in certain predetermined environments  
[NASA-CASE-RSC-10126] c11 N71-24985  
Development of apparatus for testing burning rate and flammability of materials  
[NASA-CASE-XMS-09690] c33 N72-25913  
**FLANGES**  
Cassegain antenna subreflector flange for suppressing ground noise and increasing antenna transmitting efficiency  
[NASA-CASE-XNP-00683] c09 N70-35425  
Light baffle with oblate hemispheroid surface and shading flange  
[NASA-CASE-NPO-10337] c14 N71-15604  
**FLAPS (CONTROL SURFACES)**  
Upper surface, external flow, jet-augmented flap configuration for high wing jet aircraft for noise reduction  
[NASA-CASE-XLA-00087] c02 N70-33332  
Assembly for opening flight capsule stabilizing and decelerating flaps with reference to capsule recovery  
[NASA-CASE-XMP-00641] c31 N70-36410  
Direct lift control system having flaps with slots adjacent to their leading edge and particularly adapted for lightweight aircraft  
[NASA-CASE-LAR-10249-1] c02 N71-26110  
Characteristics of system for providing yaw control of vehicles at high supersonic and hypersonic speeds by deflecting flaps mounted on upper wing surface  
[NASA-CASE-LAR-11140-1] c02 N73-20008  
Reversed cowl flap inlet thrust augmentor --- with adjustable airfoil  
[NASA-CASE-ARC-10754-1] c07 N75-24736

**FLARED BODIES**

Development and characteristics of strainer for flared tube fitting  
[NASA-CASE-XLA-05056] c15 N72-11389

**FLAT CONDUCTORS**

Method of making molded electric connector for use with flat conductor cables  
[NASA-CASE-XMP-03498] c15 N71-15986  
Shielded flat conductor cable fabricated by electroless and electrolytic plating  
[NASA-CASE-MFS-13687] c09 N71-28691  
Shielded flat conductor cable of ribbonlike wires laminates in thin flexible insulation  
[NASA-CASE-MFS-13687-2] c09 N72-22198  
Separable flat cable connector with isolated electrical contacts  
[NASA-CASE-MFS-20757] c09 N72-28225

**FLAT PLATES**

Reduced gravity liquid configuration simulator to study propellant behavior in rocket fuel tanks  
[NASA-CASE-XLE-02624] c12 N69-39988  
Exponential horn, copper plate, magnetic hammer, and anvil in apparatus for making diamonds  
[NASA-CASE-MFS-20698] c15 N72-20446  
Heat transfer device  
[NASA-CASE-MFS-22938-1] c34 N76-18374

**FLEXIBILITY**

Weatherproof helix antenna  
[NASA-CASE-XKS-08485] c07 N71-19493  
Flexible bellows joint shielding sleeve for propellant transfer pipelines  
[NASA-CASE-XNP-01855] c15 N71-28937  
Flexible joint for pressurizable garment  
[NASA-CASE-MSC-11072] c05 N74-32546

**FLEXIBLE BODIES**

Flexible backup bar for welding awkwardly shaped structures  
[NASA-CASE-XMF-00722] c15 N70-40204  
Characteristics of hermetically sealed electric switch with flexible operating capability  
[NASA-CASE-XNP-09808] c09 N71-12518  
Flexible composite membrane structure impervious to extremely reactive chemicals in rocket propellants  
[NASA-CASE-XNP-08837] c18 N71-16210  
Development and characteristics of self supporting space vehicle  
[NASA-CASE-XLA-00117] c31 N71-17680  
Design and development of flexible tunnel for use by spacecrews in performing extravehicular activities  
[NASA-CASE-MSC-12243-1] c05 N71-24728  
Vibration control of flexible bodies in steady accelerating environment  
[NASA-CASE-LAR-10106-1] c15 N71-27169  
Flexible barrier membrane comprising porous substrate and incorporating liquid gallium or indium metal used as sealant barriers for spacecraft walls and pumping liquid propellants  
[NASA-CASE-XNP-08881] c17 N71-28747  
Development of device for simulating cyclic thermal loading of flexible materials by application of mechanical stresses and deformations  
[NASA-CASE-LAR-10270-1] c32 N72-25877  
Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c02 N74-30421  
Internally supported flexible duct joint --- device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c37 N75-19686

**FLEXIBLE WINGS**

Aeroflexible wing structure with air scoop for inflating stiffeners with ram air  
[NASA-CASE-XLA-06095] c01 N69-39981  
Deployment system for flexible wing with rigid superstructure  
[NASA-CASE-XLA-01220] c02 N70-41863  
Development and characteristics of control system for flexible wings  
[NASA-CASE-XLA-06958] c02 N71-11038

**FLEXING**

Two degree inverted flexure from single block of material  
[NASA-CASE-ARC-10345-1] c15 N73-12488

**FLIGHT**

Flow meter for measuring stagnation pressure in

boundary layer around high speed flight vehicle  
[NASA-CASE-XFR-02007] c12 N71-24692

**FLIGHT ALTITUDE**

Surface based altitude measuring system for accurately measuring altitude of airborne vehicle  
[NASA-CASE-ERC-10412-1] c09 N73-12211  
Terminal guidance system --- for guiding aircraft into preselected altitude and/or heading at terminal point  
[NASA-CASE-PRC-10049-1] c21 N74-13420

**FLIGHT CONTROL**

Aircraft indicator for pilot control of takeoff roll, climbout path and verticle flight path in poor visibility conditions  
[NASA-CASE-XLA-00487] c14 N70-40157  
Two axis flight controller with potentiometer control shafts directly coupled to rotatable ball members  
[NASA-CASE-XFR-04104] c03 N70-42073  
Development of aircraft control system with high performance electrically controlled and mechanically operated hydraulic valves for precise flight operation  
[NASA-CASE-XAC-00048] c02 N71-29128  
Characteristics of system for providing yaw control of vehicles at high supersonic and hypersonic speeds by deflecting flaps mounted on upper wing surface  
[NASA-CASE-LAR-11140-1] c02 N73-20008  
Development of flight simulator system to show position of joystick displacement  
[NASA-CASE-NPO-11497] c08 N73-25206  
Solid state controller three axes controller  
[NASA-CASE-MSC-12394-1] c03 N74-10942  
G-load measuring and indicator apparatus --- for aircraft  
[NASA-CASE-ARC-10806] c14 N74-27872  
Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c05 N75-12930  
Servo valve  
[NASA-CASE-LAR-11643-1] c37 N75-13268  
Deploy/release system --- model aircraft flight control  
[NASA-CASE-LAR-11575-1] c02 N76-16014

**FLIGHT CREWS**

Survival couch for aircraft or spacecraft crews  
[NASA-CASE-XLA-00118] c05 N70-33285

**FLIGHT RECORDERS**

Event recorder with constant speed motor which rotates recording disk  
[NASA-CASE-XLA-01832] c14 N71-21006

**FLIGHT SAFETY**

Aerial capsule emergency separation device using jettisonable towers  
[NASA-CASE-XLA-00115] c03 N70-33343  
Development and characteristics of electronic signalling system and data processing equipment for warning systems to avoid midair collisions between aircraft  
[NASA-CASE-LAR-10717-1] c21 N73-30641

**FLIGHT SIMULATION**

Lunar landing flight research vehicle  
[NASA-CASE-XFR-00929] c31 N70-34966  
Television simulation for aircraft and space flight  
[NASA-CASE-XFR-03107] c09 N71-19449  
Electrical circuit selection device for simulating stage separation of flight vehicle  
[NASA-CASE-XKS-04631] c10 N71-23663

**FLIGHT SIMULATORS**

Centrifuge mounted motion simulator with elevator mechanism  
[NASA-CASE-XAC-00399] c11 N70-34815  
Table structure and rotating magnet system simulating gravitational forces on spacecraft and displaying trajectories between Earth, Venus, and Mercury  
[NASA-CASE-XNP-00708] c14 N70-35394  
Wind tunnel test section for simulating high Reynolds number over transonic speed range  
[NASA-CASE-MFS-20509] c11 N72-17183  
Development of flight simulator system to show position of joystick displacement  
[NASA-CASE-NPO-11497] c08 N73-25206  
Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c11 N74-30597

# FLIGHT TESTS

# SUBJECT INDEX

Vehicle simulator binocular multiplanar visual display system  
[NASA-CASE-ARC-10808-1] c11 N74-32718  
Full color hybrid display for aircraft simulators  
[NASA-CASE-ARC-10903-1] c09 N76-10148

**FLIGHT TESTS**  
Device for measuring drag forces in flight tests  
[NASA-CASE-XLA-00113] c14 N70-33386

**FLIGHT VEHICLES**  
Construction of leading edges of surfaces for aerial vehicles performing from subsonic to above transonic speeds  
[NASA-CASE-XLA-01486] c01 N71-23497  
Electro-optical attitude sensing device for landing approach of flight vehicle  
[NASA-CASE-XMS-01994-1] c14 N72-17326  
Design and development of active control system for air cushion vehicle to reduce or eliminate effects of excessive vertical vibratory acceleration  
[NASA-CASE-LAR-10531-1] c02 N73-13023

**FLIP-FLOPS**  
Bistable multivibrator circuits operating at high speed and low power dissipation  
[NASA-CASE-XGS-00823] c10 N71-15910  
Stepping motor control apparatus exciting windings in proper time sequence to cause motor to rotate in either direction  
[NASA-CASE-GSC-10366-1] c10 N71-18772  
Interrogator and current driver circuit for combination with transistor flip-flop circuit  
[NASA-CASE-XGS-03058] c10 N71-19547

**FLOATING**  
Floating baffle for tank drain  
[NASA-CASE-KSC-10639] c15 N73-26472  
Modification of one man life raft  
[NASA-CASE-LAR-10241-1] c05 N74-14845

**FLOATS**  
Magnetically centered liquid column float  
[NASA-CASE-XAC-00030] c14 N70-34820

**FLOTATION**  
Development and characteristics of rescue litter with inflatable flotation device for water rescue application  
[NASA-CASE-XMS-04170] c05 N71-22748

**FLOW DIRECTION INDICATORS**  
Electric circuit for reversing direction of current flow  
[NASA-CASE-XNP-00952] c10 N71-23271  
Flow angle sensor and remote readout system for use with cryogenic fluids  
[NASA-CASE-XLE-04503] c14 N71-24864

**FLOW DISTRIBUTION**  
Multiple orifice fluid flow control valve to provide different flow patterns  
[NASA-CASE-ERC-10208] c15 N70-10867  
Photographing surface flow patterns on wind tunnel test models  
[NASA-CASE-XLA-01353] c14 N70-41366  
Color photointerpretation of interference colors reflected from thin film oil-coated components in moving gases for gas flow visualization  
[NASA-CASE-XNP-01779] c12 N71-20815  
Dual wavelength scanning Doppler velocimeter --- without perturbation of flow fields  
[NASA-CASE-ARC-10637-1] c35 N75-16783  
Controlled separation combustor --- airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c20 N76-14190

**FLOW MEASUREMENT**  
Collapsible flow test device for obstructed passages  
[NASA-CASE-XMS-04917] c14 N69-24257  
Simulated fuel assembly-type flow measurement apparatus for coolant flow in reactor core  
[NASA-CASE-XLE-00724] c14 N70-34669  
Mass flow meter containing beta source for measuring nonpolar liquid flow  
[NASA-CASE-NFS-20485] c14 N72-11365  
Instrument for measuring magnitude and direction of flow velocity in flow field  
[NASA-CASE-LAR-10855-1] c14 N73-13415  
Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c35 N75-30503

**FLOW REGULATORS**  
Antibacklash circuit for hydraulic drive system  
[NASA-CASE-XNP-01020] c03 N71-12260  
Tubular flow restrictor for gas flow control in pipeline

[NASA-CASE-NPO-10117] c15 N71-15608  
Fluid flow control valve for regulating fluids in molecular quantities  
[NASA-CASE-XLE-00703] c15 N71-15967  
Control of gas flow from pressurized vessel by thermal expansion of metal plug  
[NASA-CASE-NPO-10298] c12 N71-17661  
Semitoroidal diaphragm cavitating flow control valve  
[NASA-CASE-INP-09704] c12 N71-18615  
Describing device for changing flow rate of fluid in duct in response to change in temperature  
[NASA-CASE-NFS-14259] c15 N71-19213  
Pneumatic servoamplifier for controlling flow regulation  
[NASA-CASE-MSC-12121-1] c15 N71-27147  
Gas flow control device, including housing and input port  
[NASA-CASE-NPO-11479] c15 N73-13462

**FLOW STABILITY**  
Detonation reaction engine comprising outer housing enclosing pair of inner walls for continuous flow  
[NASA-CASE-XNP-06926] c28 N71-22983  
Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-NFS-21424-1] c12 N74-27730

**FLOW VELOCITY**  
Continuous variation of propellant flow and thrust by application of liquid foam flow theory to injection orifice  
[NASA-CASE-XLE-00177] c28 N70-40367  
Measuring density of single and two-phase cryogenic fluids in rocket fuel tanks  
[NASA-CASE-XLE-00688] c14 N70-41330  
Device for adding water to high velocity exhaust jets to reduce velocity, noise, and temperature  
[NASA-CASE-XNP-01813] c28 N70-41582  
Positive displacement flowmeter for measuring extremely low flows of fluid with self calibrating features  
[NASA-CASE-XNP-02822] c14 N70-41994  
Zeta potential flowmeter for measuring very slow to very high flows  
[NASA-CASE-XNP-06509] c14 N71-23226  
Device for simultaneously determining density, velocity, and temperature of streaming gas  
[NASA-CASE-XLA-03375] c16 N71-24074  
Doppler shifted laser beam as fluid velocity sensor  
[NASA-CASE-XAC-10770-1] c16 N71-24828  
Flowmeters for sensing low fluid flow rate and pressure for application to respiration rate studies  
[NASA-CASE-FRC-10022] c12 N71-26546  
Force balanced throttle valve for fuel control in rocket engines  
[NASA-CASE-NPO-10808] c15 N71-27432  
Flow rate switch for detecting variations in fluid flow velocity through conduits of pressurized systems  
[NASA-CASE-NPO-10722] c09 N72-20199  
Instrument for measuring magnitude and direction of flow velocity in flow field  
[NASA-CASE-LAR-10855-1] c14 N73-13415  
Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-NFS-21424-1] c12 N74-27730  
Wind tunnel flow generation section  
[NASA-CASE-ARC-10710-1] c09 N75-12969  
Combined dual scatter, local oscillator laser Doppler velocimeter  
[NASA-CASE-ARC-10642-1] c36 N76-14447  
System for measuring three fluctuating velocity components in a turbulently flowing fluid  
[NASA-CASE-ARC-10974-1] c34 N76-19379

**FLOW VISUALIZATION**  
Method and apparatus for measuring shock layer radiation distribution about high velocity objects  
[NASA-CASE-XAC-02970] c14 N69-39896  
Color photointerpretation of interference colors reflected from thin film oil-coated components in moving gases for gas flow visualization  
[NASA-CASE-XNP-01779] c12 N71-20815

**FLOWMETERS**  
Collapsible flow test device for obstructed passages

- [NASA-CASE-XMS-04917] c14 N69-24257  
 Simulated fuel assembly-type flow measurement apparatus for coolant flow in reactor core  
 [NASA-CASE-XLE-00724] c14 N70-34669  
 Positive displacement flowmeter for measuring extremely low flows of fluid with self-calibrating features  
 [NASA-CASE-XMP-02822] c14 N70-41994  
 Heated element sensor for fluid flow detection in thermal conductive conduit with adaptive means to determine flow rate and direction  
 [NASA-CASE-MSC-12084-1] c12 N71-17569  
 Describing laser Doppler velocimeter for measuring mean velocity and turbulence of fluid flow  
 [NASA-CASE-MFS-20386] c21 N71-19212  
 Zeta potential flowmeter for measuring very slow to very high flows  
 [NASA-CASE-XNP-06509] c14 N71-23226  
 Flow meter for measuring stagnation pressure in boundary layer around high speed flight vehicle  
 [NASA-CASE-XPR-02007] c12 N71-24692  
 Doppler shifted laser beam as fluid velocity sensor  
 [NASA-CASE-XAC-10770-1] c16 N71-24828  
 Flowmeters for sensing low fluid flow rate and pressure for application to respiration rate studies  
 [NASA-CASE-FRC-10022] c12 N71-26546  
 Mass flow meter containing beta source for measuring nonpolar liquid flow  
 [NASA-CASE-MFS-20485] c14 N72-11365  
 Respiratory analysis system to determine gas flow rate and frequency of respiration and expiration cycles in real time  
 [NASA-CASE-MSC-13436-1] c05 N73-32015  
 Low power electromagnetic flowmeter system producing zero output signal for zero flow  
 [NASA-CASE-ARC-10362-1] c14 N73-32326  
 Electromagnetic flow rate meter --- for liquid metals  
 [NASA-CASE-LEW-10981-1] c14 N74-21018  
 Leak detector  
 [NASA-CASE-MFS-21761-1] c35 N75-15931  
 System for measuring three fluctuating velocity components in a turbulently flowing fluid  
 [NASA-CASE-ARC-10974-1] c34 N76-19379
- FLUID AMPLIFIERS**  
 Fluid jet amplifier with fluid from jet nozzle deflected by inlet pressure  
 [NASA-CASE-XLE-03512] c12 N69-21466  
 Multiple vortex amplifier system as fluid valve  
 [NASA-CASE-XNP-04709] c15 N71-15609  
 Shear modulated fluid amplifier of high pressure hydraulic vortex amplifier type  
 [NASA-CASE-MFS-10412] c12 N71-17578  
 Development of vortex fluid amplifier for throttling rocket exhaust  
 [NASA-CASE-LEW-10374-1] c28 N73-13773  
 Fluid pressure amplifier and system  
 [NASA-CASE-LAR-10868-1] c09 N74-11050
- FLUID FILMS**  
 Journal bearings --- for lubricant films  
 [NASA-CASE-LEW-11076-1] c15 N74-21061  
 Fluid journal bearings  
 [NASA-CASE-LEW-11076-4] c37 N76-15461
- FLUID FILTERS**  
 Absorbent apparatus for separating gas from liquid-gas stream used in environmental control under zero gravity conditions  
 [NASA-CASE-XMS-01492] c05 N70-41297  
 Compact high pressure filter for rocket fuel lines  
 [NASA-CASE-XNP-00732] c28 N70-41447  
 Development of liquid separating system using capillary device connected to flexible bladder storage chamber  
 [NASA-CASE-XMS-13052] c14 N71-20427  
 Fluid control apparatus and method  
 [NASA-CASE-LAR-11110-1] c34 N75-26282  
 Filter regeneration systems --- a system for regenerating a system filter in a fluid flow line  
 [NASA-CASE-MSC-14273-1] c34 N75-33342  
 Quick disconnect filter coupling  
 [NASA-CASE-MFS-22323-1] c37 N76-14463
- FLUID FLOW**  
 Fluid jet amplifier with fluid from jet nozzle deflected by inlet pressure  
 [NASA-CASE-XLE-03512] c12 N69-21466
- Pneumatic system for cyclic control of fluid flow in pneumatic device  
 [NASA-CASE-XMS-04843] c03 N69-21469  
 Multiple orifice fluid flow control valve to provide different flow patterns  
 [NASA-CASE-ERC-10208] c15 N70-10867  
 Conical valve plug for use with reactive cryogenic fluids  
 [NASA-CASE-XLE-00715] c15 N70-34859  
 Pressure regulating system with high pressure fluid source, adapted to maintain constant downstream pressure  
 [NASA-CASE-XNP-00450] c15 N70-38603  
 Antiflutter check valve for use with high pressure fluid flow  
 [NASA-CASE-XNP-01152] c15 N70-41811  
 Inductive liquid level detection system  
 [NASA-CASE-XLE-01609] c14 N71-10500  
 Multiple vortex amplifier system as fluid valve  
 [NASA-CASE-XNP-04709] c15 N71-15609  
 Heated element sensor for fluid flow detection in thermal conductive conduit with adaptive means to determine flow rate and direction  
 [NASA-CASE-MSC-12084-1] c12 N71-17569  
 Throttle valve for regulating fluid flow volume  
 [NASA-CASE-XNP-09698] c15 N71-18580  
 Photometric flow meter with comparator reference means  
 [NASA-CASE-XGS-01331] c14 N71-22996  
 Combination pressure transducer-calibrator assembly for measuring fluid  
 [NASA-CASE-XNP-01660] c14 N71-23036  
 Valve assembly for controlling simultaneously more than one fluid flow, and having stable qualities under loads  
 [NASA-CASE-XMS-05890] c09 N71-23191  
 Flowmeters for sensing low fluid flow rate and pressure for application to respiration rate studies  
 [NASA-CASE-FRC-10022] c12 N71-26546  
 Control valve for switching main stream of fluid from one stable position to another by means of electrohydrodynamic forces  
 [NASA-CASE-NPO-10416] c12 N71-27332  
 Fluid control jet amplifiers  
 [NASA-CASE-XLE-09341] c12 N71-28741  
 Mass flow meter containing beta source for measuring nonpolar liquid flow  
 [NASA-CASE-MFS-20485] c14 N72-11365  
 Flow rate switch for detecting variations in fluid flow velocity through conduits of pressurized systems  
 [NASA-CASE-NPO-10722] c09 N72-20199  
 Torsional disconnect device for releasably coupling distal ends of fluid conduits  
 [NASA-CASE-NPO-10704] c15 N72-20445  
 Capacitive tank gaging device for monitoring one constituent of two phase fluid by sensing dielectric constant  
 [NASA-CASE-MFS-21629] c14 N72-22442  
 Transferring liquid nitrogen through vacuum chamber to cryopanel  
 [NASA-CASE-LAR-10031] c15 N72-22484  
 Design and development of device to prevent geysering during convective circulation of cryogenic fluids  
 [NASA-CASE-KSC-10615] c15 N73-12486  
 Design and development of thermomechanical pump for transmitting warming fluid through fluid circuit to control temperature of spacecraft instrumentation  
 [NASA-CASE-NPO-11417] c15 N73-24513  
 Flow control valve --- for high temperature fluids  
 [NASA-CASE-NPO-11951-1] c15 N74-21065  
 Apparatus for establishing flow of a fluid mass having a known velocity  
 [NASA-CASE-MFS-21424-1] c12 N74-27730  
 Internally supported flexible duct joint --- device for conducting fluids in high pressure systems  
 [NASA-CASE-MFS-19193-1] c37 N75-19686  
 Flow measuring apparatus  
 [NASA-CASE-LEW-12078-1] c35 N75-30503  
 Filter regeneration systems --- a system for regenerating a system filter in a fluid flow line  
 [NASA-CASE-MSC-14273-1] c34 N75-33342  
 An improved accumulator  
 [NASA-CASE-MFS-19287-1] c34 N76-14418

# FLUID INJECTION

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[NASA-CASE-XLE-01645] c03 N71-20904  
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gallium arsenide films to manganese substrates

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[NASA-CASE-NPO-11118] c03 N72-25021

**GARMENTS**  
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Gas analyzer for bi-gaseous mixtures suitable for use in test facilities  
[NASA-CASE-XLA-01131] c14 N71-10774

Describing crystal oscillator instrument for detecting condensable gas contaminants in vacuum apparatus  
[NASA-CASE-NPO-10144] c14 N71-17701

Design and characteristics of time of flight mass spectrometer to measure or analyze gases at low pressures and time of flight of single gas molecule  
[NASA-CASE-XNP-01056] c14 N71-23041

Microwave double resonance spectroscopy absorption cell for gas analysis  
[NASA-CASE-LAR-10305] c14 N71-26137

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[NASA-CASE-ERC-10014] c14 N71-28863

Development and characteristics of injection system for use with gas chromatograph  
[NASA-CASE-ARC-10344-1] c14 N72-21433

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[NASA-CASE-ARC-10308-1] c06 N72-31141

Apparatus for analyzing gas samples in containers including vacuum chamber, mass spectrometer, and gas chromatography  
[NASA-CASE-GSC-10903-1] c14 N73-12444

Analysis of volatile organic compounds --- quantitative and qualitative analysis of trace amounts in gas samples  
[NASA-CASE-MSC-114428-1] c06 N74-19776

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[NASA-CASE-GSC-11492-1] c14 N74-26949

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[NASA-CASE-LAR-11428-1] c14 N74-34857

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[NASA-CASE-ARC-10802-1] c35 N75-30502

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[NASA-CASE-MSC-14757-1] c37 N76-13496

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[NASA-CASE-LAR-11675-1] c45 N76-17656

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Payload soft landing system using stowable gas bag  
[NASA-CASE-XLA-09881] c31 N71-16085

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Externally pressurized air bearing for gyros operating in high temperature, low gravity environments  
[NASA-CASE-XMF-00515] c15 N70-34664

Slit regulated gas journal bearing  
[NASA-CASE-XNP-00476] c15 N70-38620

Air bearings for spacecraft gyros  
[NASA-CASE-XMF-00339] c15 N70-39896

Air bearings for near frictionless transfer of loads from one body to another  
[NASA-CASE-XMF-01887] c15 N71-10617

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[NASA-CASE-XMS-01445] c12 N71-16031

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[NASA-CASE-XGS-02011] c15 N71-20739

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Low friction gas bearing system for fluid power transmission to bearing-supported payload  
[NASA-CASE-ERC-10097] c15 N71-28465

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[NASA-CASE-XLA-09346] c15 N71-28740

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[NASA-CASE-MFS-20423] c15 N72-11388

Air bearing for use in exterior environment for moving heavy loads  
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Thrust bearing  
[NASA-CASE-LEW-11949-1] c37 N75-26378

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[NASA-CASE-GSC-11551-1] c37 N76-18459

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Micropacked column for rapid chromatographic analysis using low gas flow rates  
[NASA-CASE-XNP-04816] c06 N69-39936

Automatic baseline stabilization for ionization detector used in gas chromatograph  
[NASA-CASE-XNP-03128] c10 N70-41991

Gas chromatographic method for determining water in nitrogen tetroxide rocket propellant  
[NASA-CASE-NPO-10234] c06 N72-17094

Development and characteristics of injection system for use with gas chromatograph  
[NASA-CASE-ARC-10344-1] c14 N72-21433

Gas chromatographic method for analyzing hydrogen deuterium mixtures  
[NASA-CASE-NPO-11322] c06 N72-25146

Ultraviolet chromatographic detector for quantitative and qualitative analysis of compounds  
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[NASA-CASE-LEW-10250-1] c22 N71-28759

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[NASA-CASE-NPO-10309] c15 N69-23190

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[NASA-CASE-XLE-09475-1] c33 N71-15568

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[NASA-CASE-NPO-10440] c15 N72-21466  
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[NASA-CASE-ARC-10263-1] c14 N72-22438  
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[NASA-CASE-ARC-10631-1] c74 N76-20958
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[NASA-CASE-MSC-12297] c14 N72-23457  
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[NASA-CASE-NPO-10633] c03 N72-28025  
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[NASA-CASE-NPO-11479] c15 N73-13462  
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[NASA-CASE-NPO-11682-1] c15 N74-15127  
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[NASA-CASE-NPO-11369] c15 N73-13467  
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[NASA-CASE-NPO-13449-1] c36 N75-32441  
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[NASA-CASE-XLA-01131] c14 N71-10774
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[NASA-CASE-NPO-10117] c15 N71-15608
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- Dynamic sensor for gas pressure or density measurement  
[NASA-CASE-XAC-02877] c14 N70-41681
- Wide range dynamic pressure sensor with vibrating diaphragm for measuring density and pressure of gaseous environment  
[NASA-CASE-ARC-10263-1] c14 N72-22438
- Measurement of gas production of microorganisms --- using pressure sensors  
[NASA-CASE-LAR-11326-1] c35 N75-33368
- GAS STREAMS**
- Device for simultaneously determining density, velocity, and temperature of streaming gas  
[NASA-CASE-XLA-03375] c16 N71-24074
- Stagnation pressure probe --- for measuring pressure of supersonic gas streams  
[NASA-CASE-LAR-11139-1] c14 N74-32878
- GAS TEMPERATURE**
- Device for simultaneously determining density, velocity, and temperature of streaming gas  
[NASA-CASE-XLA-03375] c16 N71-24074
- GAS TURBINE ENGINES**
- Variable-orifice hydraulic mechanism for aircraft gas turbine engine fuel control  
[NASA-CASE-LEW-11187-1] c28 N73-19793
- Swirl can, full-annulus combustion chambers for high performance gas turbine engines  
[NASA-CASE-LEW-11326-1] c23 N73-30665
- Controlled separation combustor --- airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c20 N76-14190
- Fused silicide coatings containing discrete particles for protecting niobium alloys --- used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c27 N76-16229
- GAS TURBINES**
- Method for maintaining good performance in gas turbine during air flow distortion  
[NASA-CASE-LEW-10286-1] c28 N71-28915
- Gas turbine exhaust nozzle --- for noise reduction  
[NASA-CASE-LEW-11569-1] c28 N74-15453
- Counter pumping debris excluder and separator  
[NASA-CASE-LEW-11855-1] c37 N76-20487
- GAS VALVES**
- High-temperature, high-pressure spherical segment valve  
[NASA-CASE-XAC-00074] c15 N70-34817
- Shrink-fit vacuum system gas valve  
[NASA-CASE-XGS-00587] c15 N70-35087
- Gas valve operated by thermally expanding and contracting device  
[NASA-CASE-XLE-00815] c15 N70-35407
- Three-port transfer valve with one port open continuously suitable for manned space flight  
[NASA-CASE-XAC-01158] c15 N71-23051
- GAS WELDING**
- Emission spectroscopy method for contamination monitoring of inert gas metal arc welding  
[NASA-CASE-XMP-02039] c15 N71-15871
- Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c37 N75-19683
- GAS-LIQUID INTERACTIONS**
- Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c34 N75-26282
- GASDYNAMIC LASERS**
- Diatom infrared gasdynamic laser --- for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c36 N75-31426
- GASEOUS DIFFUSION**
- Gas purged dry box glove reducing permeation of air or moisture into dry box or isolator by diffusion through glove  
[NASA-CASE-XLE-02531] c05 N71-23080
- Gaseous core diffusion nuclear reactor for thermal energy generation  
[NASA-CASE-LEW-10250-1] c22 N71-28759
- GASEOUS FISSION REACTORS**
- Nuclear gaseous reactor for heating working fluid to high temperatures  
[NASA-CASE-XLE-00321] c22 N70-34572
- Gaseous core diffusion nuclear reactor for thermal energy generation  
[NASA-CASE-LEW-10250-1] c22 N71-28759
- GASEOUS ROCKET PROPELLANTS**
- Electrostatic ion engines using high velocity electrons to ionize propellant  
[NASA-CASE-XLE-00376] c28 N70-37245
- Detonation reaction engine comprising outer housing enclosing pair of inner walls for continuous flow  
[NASA-CASE-XMP-06926] c28 N71-22983
- GASES**
- Apparatus and process for volumetrically dispensing reagent quantities of volatile chemicals for small batch reactions  
[NASA-CASE-NPO-10070] c15 N71-27372
- High speed scanner for measuring mass of preselected gases at high sampling rate  
[NASA-CASE-LAR-10766-1] c14 N72-21432
- Observation window for internal gas confining chamber  
[NASA-CASE-NPO-10890] c11 N73-12265
- Device for detection of combustion light preceding gaseous explosions  
[NASA-CASE-LAR-10739-1] c14 N73-16484
- GASKETS**
- Leakproof soft metal seal for use in very high vacuum systems operating at cryogenic temperatures  
[NASA-CASE-XGS-02441] c15 N70-41629
- Reinforced polyquinoxaline gasket and method of preparing the same --- resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MPS-21364-1] c15 N74-18126
- GATES (CIRCUITS)**
- Flux gate magnetometer with toroidal gating coil and solenoidal output coil for signal modulation or amplification  
[NASA-CASE-XGS-01881] c09 N70-40123
- Silicon controlled rectifier pulse gate amplifier for blocking false gating caused by negative transient voltages  
[NASA-CASE-XLA-07497] c09 N71-12514
- Logic AND gate for fluid circuits  
[NASA-CASE-XLA-07391] c12 N71-17579
- Synchronous counter design incorporating cascaded binary stages driven by previous stages and inputs through NAND gates  
[NASA-CASE-XGS-02440] c08 N71-19432
- Switching series regulator with gating control network  
[NASA-CASE-XMS-09352] c09 N71-23316
- Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-2] c60 N76-18803
- GATES (OPENINGS)**
- Longitudinal film gate and lock mechanism for securing film in motion picture cameras under

- vibration and high acceleration loads  
[NASA-CASE-LAR-10686] c14 N71-28935
- GEARS**  
Precision stepping drive device using cam disk  
[NASA-CASE-MFS-14772] c15 N71-17692  
Gearing system for eliminating backlash and  
filtering input torque fluctuations from high  
inertia load  
[NASA-CASE-XGS-04227] c15 N71-21744  
Self lubricating gears and other mechanical  
parts having surface adapted to frictional  
contact  
[NASA-CASE-MFS-14971] c15 N71-24984  
Concentric differential gearing arrangement  
[NASA-CASE-ARC-10462-1] c15 N74-27901
- GELLED ROCKET PROPELLANTS**  
Method and apparatus for producing fine  
particles in cryogenic liquid bath for gelled  
rocket propellants  
[NASA-CASE-NPO-10250] c23 N71-16212
- GELS**  
Intermittent type silica gel adsorption  
refrigerator for providing temperature control  
for spacecraft components  
[NASA-CASE-XNP-0C920] c15 N71-15906
- GENERATORS**  
Apparatus for establishing flow of a fluid mass  
having a known velocity  
[NASA-CASE-MFS-21424-1] c12 N74-27730
- GINBALS**  
Gimbaled partially submerged nozzle for solid  
propellant rocket engines for providing  
directional control  
[NASA-CASE-XMP-01544] c28 N70-34162  
Inertial gimbal alignment system for spacecraft  
guidance  
[NASA-CASE-XMP-01669] c21 N71-23289  
Three stage motion restraining mechanism for  
restraining and damping three dimensional  
vibrational movement of gimbaled package  
during launch of spacecraft  
[NASA-CASE-GSC-10306-1] c15 N71-24694  
Hermetically sealed vibration damper design for  
use in gimbal assembly of spacecraft, inertial  
guidance system  
[NASA-CASE-HSC-10959] c15 N71-26243  
Low friction bearing and lock mechanism for  
two-axis gimbal carrying satellite payload  
[NASA-CASE-GSC-10556-1] c31 N71-26537
- GLANDS (SEALS)**  
Development of mating flat surfaces to inhibit  
leakage of fluid around shafts  
[NASA-CASE-XLE-10326-2] c15 N72-29488
- GLASS**  
Fabricating solar cells with dielectric layers  
to improve glass fusion  
[NASA-CASE-XGS-04531] c03 N69-24267  
Reduced gravity liquid configuration simulator  
to study propellant behavior in rocket fuel  
tanks  
[NASA-CASE-XLE-02624] c12 N69-39988  
Metal pattern bonding technique for cover glass  
attachment to silicon solar cells for space  
applications  
[NASA-CASE-XLE-08569] c03 N71-23449  
Apparatus for applying thin glass slides to  
solar cells  
[NASA-CASE-NPO-10575] c03 N72-25019  
Glass-to-metal seals comprising relatively high  
expansion metals  
[NASA-CASE-LEW-10698-1] c15 N74-21063  
Covered silicon solar cells and method of  
manufacture --- with polymeric films  
[NASA-CASE-LEW-11065-2] c44 N76-14600  
Manufacture of glass-to-metal seals wherein the  
cleanliness of the process is enhanced and the  
leak resistance of the resulting seal is  
maximized  
[NASA-CASE-LAR-11563-1] c37 N76-21558
- GLASS COATINGS**  
Method of attaching cover glass to silicon solar  
cell without using adhesive  
[NASA-CASE-XLE-08569-2] c03 N71-24681  
Helium outgassing process for fused glass  
coating on ion accelerator grid  
[NASA-CASE-LEW-10278-1] c15 N71-28582  
Development of process for constructing  
protective covers for solar cells  
[NASA-CASE-GSC-11514-1] c03 N72-24037
- GLASS ELECTRODES**  
Liquid junction for glass electrode or pH meters  
[NASA-CASE-NPO-10682] c15 N70-34699
- GLASS FIBERS**  
Nonmagnetic hermetically sealed battery case  
made of epoxy resin and woven glass tape for  
use with electrochemical cells in spacecraft  
[NASA-CASE-XGS-00886] c03 N71-11053  
Lathe tool and holder combination for machining  
resin impregnated fiberglass cloth laminates  
[NASA-CASE-XLA-10470] c15 N72-21489  
Development and characteristics of polyimide  
impregnated laminates with fiberglass cloth  
backing for application as printed circuit  
boards  
[NASA-CASE-MFS-20408] c18 N73-12604  
Technique for bonding --- process for molding  
silicone elastomer into fiberglass honeycomb  
panel  
[NASA-CASE-LAR-10073-1] c32 N74-23449  
Method of repairing discontinuity in fiberglass  
structures  
[NASA-CASE-LAR-10416-1] c18 N74-30001  
Fiber modified polyurethane foam for ballistic  
protection  
[NASA-CASE-ARC-10714-1] c27 N76-15310
- GLIDE PATHS**  
Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c05 N75-12930
- GLOBES**  
Orbital and entry tracking accessory for globes  
--- to provide range requirements for reentry  
vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c14 N74-21015
- GLOVES**  
Gas purged dry box glove reducing permeation of  
air or moisture into dry box or isolator by  
diffusion through glove  
[NASA-CASE-XLE-02531] c05 N71-23080
- GLOW DISCHARGES**  
Deposition of alloy films --- on irregularly  
shaped metal object  
[NASA-CASE-LEW-11262-1] c18 N74-13270
- GLUCOSE**  
Use of enzyme hexokinase and glucose to reduce  
inherent light levels of ATP in luciferase  
compositions  
[NASA-CASE-XGS-05533] c04 N69-27487
- GOLD COATINGS**  
Lithium drifted silicon radiation detector with  
gold rectifying contacts  
[NASA-CASE-XLE-10529] c14 N69-23191
- GONDOLAS**  
System for controlling torque buildup in  
suspension of gondola connected to balloon by  
parachute shroud lines  
[NASA-CASE-GSC-11077-1] c02 N73-13008
- GRANULAR MATERIALS**  
Development of device for separating,  
collecting, and viewing soil particles  
[NASA-CASE-XNP-09770] c15 N71-20440
- GRAPHITE**  
Silver chloride use in technique for fusion  
bonding of graphite to silver, glass,  
ceramics, and certain other metals  
[NASA-CASE-XGS-00963] c15 N69-39735  
Method of preparing graphite reinforced aluminum  
composite  
[NASA-CASE-MFS-21077-1] c24 N75-28135  
A method for fabricating graphite/epoxy laminate  
from ultrathin laminae  
[NASA-CASE-MFS-23229-1] c24 N76-19231
- GRATINGS (SPECTRA)**  
Concave grating spectrometer for use in near and  
vacuum ultraviolet regions  
[NASA-CASE-XGS-01036] c14 N70-40003
- GRAVIMETERS**  
Device for determining acceleration of gravity  
by interferometric measurement of travel of  
falling body  
[NASA-CASE-XNP-05844] c14 N71-17587
- GRAVITATION**  
Design of precision vertical alignment system  
using laser with gravitationally sensitive  
cavity  
[NASA-CASE-ARC-10444-1] c16 N73-33397  
Anti-gravity device  
[NASA-CASE-MFS-22758-1] c70 N75-26789



## GRAVITATIONAL CONSTANT

Gravity device for accurate and rapid indication of relative gravity conditions aboard accelerating carrier  
[NASA-CASE-XMP-00424] c11 N70-38196

## GRAVITATIONAL EFFECTS

Gravity environment simulation by locomotion and restraint aid for studying manual operation performance of astronauts at zero gravity  
[NASA-CASE-ARC-10153] c05 N71-28619  
Rotary plant growth accelerating apparatus --- weightlessness  
[NASA-CASE-ARC-10722-1] c51 N75-25503

## GRAVITATIONAL FIELDS

Difference indicating circuit used in conjunction with device measuring gravitational fields  
[NASA-CASE-XNP-08274] c10 N71-13537

## GRAVITY GRADIENT SATELLITES

Stabilization system for gravity-oriented satellites using single damper rod  
[NASA-CASE-XAC-01591] c31 N71-17729  
Method of stationkeeping for lenticular gravity gradient satellites  
[NASA-CASE-XLA-03132] c31 N71-22969

## GRAVITY GRADIOMETERS

Gravity device for accurate and rapid indication of relative gravity conditions aboard accelerating carrier  
[NASA-CASE-XMP-00424] c11 N70-38196  
Gravity gradient attitude control system with gravity gradiometer and reaction wheels for artificial satellite attitude control  
[NASA-CASE-GSC-10555-1] c21 N71-27324

## GRIDS

Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c20 N75-18310  
Apparatus for forming dished ion thruster grids  
[NASA-CASE-LEW-11694-2] c37 N76-14461  
Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c20 N76-21276

## GRINDING (MATERIAL REMOVAL)

Laser device for removing material from rotating object for dynamic balancing  
[NASA-CASE-MFS-11279] c16 N71-20400  
Grinding mixtures of powdered metals and inert fillers for conversion to halide  
[NASA-CASE-LEW-10450-1] c15 N72-25448

## GRINDING MACHINES

Grinding arrangement for ball nose milling cutters  
[NASA-CASE-LAR-10450-1] c15 N74-27905

## GROOVES

Nonreusable energy absorbing device comprising ring member with plurality of recesses, cutting members, and guide member mounted in each recess  
[NASA-CASE-XMP-10040] c15 N71-22877  
Spiral groove seal --- for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c15 N74-10474  
Spiral groove seal --- for rotating shaft  
[NASA-CASE-XLE-10326-4] c15 N74-15125

## GROUND EFFECT MACHINES

Hovering type flying vehicle design and principle mechanisms for manned or unmanned use  
[NASA-CASE-MSC-12111-1] c02 N71-11039  
Platform with several ground effect pads and plenum chambers  
[NASA-CASE-MFS-14685] c31 N71-15689  
Design and development of active control system for air cushion vehicle to reduce or eliminate effects of excessive vertical vibratory acceleration  
[NASA-CASE-LAR-10531-1] c02 N73-13023  
Open tube guideway for high speed air cushioned vehicles  
[NASA-CASE-LAR-10256-1] c11 N74-34672

## GROUND HANDLING

Supporting and protecting frame structure and plug for empty thrust chamber assembly, handling, and shipping  
[NASA-CASE-XMP-00580] c11 N70-35383

## GROUND STATIONS

Traffic control system for supersonic transports using synchronous satellite for data relay between vehicles and ground station  
[NASA-CASE-GSC-10087-1] c02 N71-19287

Spacecraft transponder and ground station radar system for mapping planetary surfaces  
[NASA-CASE-NPO-11001] c07 N72-21118

## GROUND SUPPORT EQUIPMENT

Equipment for testing of ground station ranging equipment and spacecraft transponders  
[NASA-CASE-XMS-05454-1] c07 N71-12391  
Controlled release device for use in launching rockets or missiles  
[NASA-CASE-IKS-03338] c15 N71-24043

## GROUND-AIR-GROUND COMMUNICATIONS

Fabry-Perot interferometer retrodirective reflector modulator for optical communication  
[NASA-CASE-XGS-04480] c16 N69-27491  
Closed loop radio communication ranging system to determine distance between moving airborne vehicle and fixed ground station  
[NASA-CASE-XNP-01501] c21 N70-41930  
Location identification system with ground based transmitter and aircraft borne receiver/decoder  
[NASA-CASE-BRC-10324] c07 N72-25173

## GUIDANCE (MOTION)

Hovering type flying vehicle design and principle mechanisms for manned or unmanned use  
[NASA-CASE-MSC-12111-1] c02 N71-11039  
Development of adjustable attitude guide block for setting pins perpendicular to irregular convex work surface  
[NASA-CASE-XLA-07911] c15 N71-15571  
Longitudinal film gate and lock mechanism for securing film in motion picture cameras under vibration and high acceleration loads  
[NASA-CASE-LAR-10686] c14 N71-28935  
Combination guide and rotary bearing for freely moving shaft  
[NASA-CASE-XLA-00013] c15 N71-29136  
Guide member for stabilizing cable of open shaft elevator  
[NASA-CASE-KSC-10513] c15 N72-25453

## GUIDANCE SENSORS

Light sensitive digital aspect sensor for attitude control of earth satellites or space probes  
[NASA-CASE-XGS-00359] c14 N70-34158  
Guidance analyzer having suspended spacecraft simulating sphere for astronavigation  
[NASA-CASE-XNP-09572] c14 N71-15621  
Optical gauging system for monitoring machine tool alignment  
[NASA-CASE-XAC-09489-1] c15 N71-26673  
Development of light sensing system for controlled orientation of object relative to sun or other light source  
[NASA-CASE-NPO-11311] c14 N72-25414  
Sun direction detection system --- for use in controlling the attitude of a vehicle  
[NASA-CASE-NPO-13722-1] c19 N75-33169

## GUN LAUNCHERS

Self-obturator gas-operated launcher for launching projectiles in decontaminated medium  
[NASA-CASE-NPO-11013] c11 N72-22247

## GUNN EFFECT

Voltage tunable Gunn effect semiconductor for microwave generation  
[NASA-CASE-XER-07894] c09 N71-18721  
Gunn effect microwave diodes with RF shielding  
[NASA-CASE-ERC-10119] c26 N72-21701  
Multiterminal Gunn-type semiconductor microwave generator for producing stable signals  
[NASA-CASE-XER-07895] c26 N72-25679  
Microwave generator using Gunn effect for magnetic tuning  
[NASA-CASE-NPO-12106] c09 N73-15235

## GUNS

Method of peening and portable peening gun  
[NASA-CASE-MFS-23047-1] c37 N76-18454

## GYRATORS

Design of gyrator circuit using operational amplifiers to replace ungrounded inductors  
[NASA-CASE-XAC-10608-1] c09 N71-12517  
Gyrator circuit using MOS field effect transistors  
[NASA-CASE-MFS-21433] c09 N73-20232  
Integrated P-channel MOS gyrator  
[NASA-CASE-MFS-22343-1] c09 N74-34638  
Integrable power gyrator --- with Z-matrix design using parallel transistors  
[NASA-CASE-MFS-22342-1] c33 N75-30428

## GYROSCOPES

Externally pressurized air bearing for gyros

operating in high temperature, low gravity environments  
[NASA-CASE-XMP-00515] c15 N70-34664  
Air bearings for spacecraft gyros  
[NASA-CASE-XMP-00339] c15 N70-39896  
Development of spacecraft experiment pointing and attitude control system  
[NASA-CASE-XLA-05464] c21 N71-14132  
Strapped down gyroscope aligned with sun and star tracker optical axis calibrating roll, yaw and pitch values  
[NASA-CASE-ARC-10716-1] c31 N73-32784  
Temperature compensated digital inertial sensor --- circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c14 N74-15094

**GYROSTABILIZERS**  
Passive dual spin misalignment compensators --- gyrostabilized device  
[NASA-CASE-GSC-11479-1] c21 N74-28097  
Annular momentum control device used for stabilization of space vehicles and the like  
[NASA-CASE-LAR-11051-1] c15 N76-14158

## H

**HAFNIUM**  
Thermal shock resistant hafnia ceramic materials  
[NASA-CASE-LAR-10894-1] c18 N73-14584

**HALIDES**  
Grinding mixtures of powdered metals and inert fillers for conversion to halide  
[NASA-CASE-LEW-10450-1] c15 N72-25448  
Zinc-halide battery with molten electrolyte  
[NASA-CASE-NPO-11961-1] c44 N76-18643

**HALL EFFECT**  
Current measurement by use of Hall effect generator  
[NASA-CASE-XAC-01662] c14 N71-23037  
Brushless dc tachometer design with Hall effect crystals and output voltage magnitude proportional to rotor speed  
[NASA-CASE-MPS-20385] c09 N71-24904  
Development of Hall effect transducer for converting mechanical shaft rotations into proportional electrical signals  
[NASA-CASE-LAR-10620-1] c09 N72-25255  
Speed control system for dc motor equipped with brushless Hall effect device  
[NASA-CASE-MPS-20207-1] c09 N73-32107  
Hall effect magnetometer  
[NASA-CASE-LEW-11632-3] c14 N74-33944  
Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c35 N75-13213

**HALL GENERATORS**  
Current measurement by use of Hall effect generator  
[NASA-CASE-XAC-01662] c14 N71-23037

**HALOGENS**  
Modification of polyurethanes with alkyl halide resins, inorganic salts, and encapsulated volatile and reactive halogen for fuel fire control  
[NASA-CASE-ARC-10098-1] c06 N71-24739

**HAMMERS**  
Exponential horn, copper plate, magnetic hammer, and anvil in apparatus for making diamonds  
[NASA-CASE-MPS-20698] c15 N72-20446

**HAND (ANATOMY)**  
Mechanically operated hand which can depress trigger using touch control device  
[NASA-CASE-MPS-20413] c15 N72-21463  
Therapeutic hand exerciser  
[NASA-CASE-LAR-11667-1] c52 N76-19785

**HANDLING EQUIPMENT**  
Supporting and protecting frame structure and plug for empty thrust chamber assembly, handling, and shipping  
[NASA-CASE-XMP-00580] c11 N70-35383  
Handling tool for printed circuit cards  
[NASA-CASE-MPS-20453] c15 N71-29133

**HARDENING (MATERIALS)**  
Method of heat treating age-hardenable alloys  
[NASA-CASE-XMP-01311] c26 N75-29236

**HARMONIC GENERATORS**  
Wideband generator for producing sine wave quadrature and second harmonic of input signal  
[NASA-CASE-NPO-11133] c10 N72-20223

**HARMONICS**  
Real time analysis of voiced sounds  
[NASA-CASE-NPO-13465-1] c71 N75-13593

**HARNESSES**  
Helmet and torso tiedown mechanism for shortening pressure suits upon inflation  
[NASA-CASE-XMS-00784] c05 N71-12335  
One hand backpack harness  
[NASA-CASE-LAR-10102-1] c05 N72-23085  
Shoulder harness and lap belt restraint system  
[NASA-CASE-ARC-10519-2] c05 N75-25915

**HATCHES**  
Design and specifications of emergency escape system for spacecraft structures  
[NASA-CASE-MSC-12086-1] c05 N71-12345

**HEART FUNCTION**  
Development of instantaneous reading tachometer for measuring electrocardiogram signal rate  
[NASA-CASE-MPS-20418] c14 N73-24473  
Ultrasonic biomedical measuring and recording apparatus --- for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10597-1] c05 N74-20726

**HEART RATE**  
Digital cardiometer incorporating circuit for measuring heartbeat rate of subject over predetermined portion of one minute also converting rate to beats per minute  
[NASA-CASE-XMS-02399] c05 N71-22896  
Development of instantaneous reading tachometer for measuring electrocardiogram signal rate  
[NASA-CASE-MPS-20418] c14 N73-24473  
Digital computing cardiometer  
[NASA-CASE-MPS-20284-1] c05 N74-12778

**HEAT**  
Thermionic converter for converting heat energy directly into electrical energy  
[NASA-CASE-XLE-01903] c22 N71-23599

**HEAT EXCHANGERS**  
Electrothermal rocket engine using resistance heated heat exchanger  
[NASA-CASE-XLE-00267] c28 N70-33356  
Space suit body heat exchanger design composed of thermal conductance yarn and liquid coolant loops  
[NASA-CASE-XMS-09571] c05 N71-19439  
Dual solid cryogenics for spacecraft refrigeration insuring low temperature cooling for extended periods  
[NASA-CASE-GSC-10188-1] c23 N71-24725  
Shell-side liquid metal boiler employing tube and shell heat exchanger  
[NASA-CASE-NPO-10831] c33 N72-20915  
Heat exchanger and decontamination system for multistage refrigeration unit  
[NASA-CASE-NPO-10634] c23 N72-25619  
An improved heat exchanger --- suited for low volume flow  
[NASA-CASE-MPS-22991-1] c34 N75-10366  
Heat exchanger --- rocket combustion chambers and cooling systems  
[NASA-CASE-LEW-12252-1] c34 N75-19579  
A heat exchanger and method of making  
[NASA-CASE-LEW-12441-1] c34 N75-19580  
Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c77 N75-20139  
Heat exchanger system and method  
[NASA-CASE-LAR-10799-2] c34 N76-17317  
Heat transfer device  
[NASA-CASE-MPS-22938-1] c34 N76-18374

**HEAT FLUX**  
Heat flux sensor assembly with proviso for heat shield to reduce radiative transfer between sensor elements  
[NASA-CASE-XMS-05909-1] c14 N69-27459  
Heat flux sensor adapted for mounting on aircraft or spacecraft to measure aerodynamic heat flux inflow to aircraft skin  
[NASA-CASE-XPR-03802] c33 N71-23085  
Radial heat flux transformer for use in heating and cooling processes  
[NASA-CASE-NPO-10828] c33 N72-17948

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- [NASA-CASE-XNP-07488] c11 N71-18773  
**HIGH VOLTAGES**  
Hollow spherical electrode for shielding dielectric junction between high voltage conductor and insulator
- [NASA-CASE-XLE-03778] c09 N69-21542  
High voltage cable for use in high intensity ionizing radiation fields
- [NASA-CASE-XNP-00738] c09 N70-38201  
High voltage pulse generator for testing flash and ignition limits of nonmetallic materials in controlled atmospheres
- [NASA-CASE-MSC-12178-1] c09 N71-13518  
High voltage transistor circuit
- [NASA-CASE-XNP-06937] c09 N71-19516  
High voltage divider system for attenuating high voltages to convenient levels suitable for introduction to measuring circuits
- [NASA-CASE-XLE-02008] c09 N71-21583  
High voltage, high current Schottky barrier solar cell
- [NASA-CASE-NPO-13482-1] c03 N74-30448  
Cesium thermionic converters having lanthanum hexaboride electrodes
- [NASA-CASE-LEW-12038-1] c44 N76-10570  
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- [NASA-CASE-GSC-11849-1] c33 N76-16332  
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- [NASA-CASE-MFS-22631-1] c66 N76-19888  
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System for storing histogram data in optimum number of elements
- [NASA-CASE-XNP-09785] c08 N69-21928  
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Water cooled contactors for holding rotating carbon arc anode
- [NASA-CASE-XMS-03700] c15 N69-24266  
Quick disconnect latch and handle combination for mounting articles on walls or supporting bases in spacecraft under zero gravity conditions
- [NASA-CASE-MFS-11132] c15 N71-17649  
Holder for high frequency crystal resonators
- [NASA-CASE-XNP-03637] c15 N71-21311  
Design and construction of mechanical probe for determining if object is properly secured
- [NASA-CASE-MFS-20760] c14 N72-33377  
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- [NASA-CASE-MFS-23281-1] c35 N76-18413  
**HOLE MOBILITY**  
Hole mobility of deposited semiconductor films in vacuum utilizing thermal gradient
- [NASA-CASE-XKS-04614] c15 N69-21460  
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- [NASA-CASE-ERC-10019] c16 N71-15551  
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- [NASA-CASE-MFS-20074] c16 N71-15565

- Recording and reconstructing focused image holograms  
[NASA-CASE-ERC-10017] c16 N71-15567
- Method and means for recording and reconstructing holograms without use of reference beam  
[NASA-CASE-ERC-10020] c16 N71-26154
- Multiple image storing system for obtaining holographic record on film of high speed projectile  
[NASA-CASE-MFS-20596] c14 N72-17324
- Thin film analyzer utilizing holographic techniques  
[NASA-CASE-MFS-20823-1] c16 N73-30476
- Method and apparatus for checking the stability of a setup for making reflection type holograms  
[NASA-CASE-MFS-21455-1] c16 N74-15146
- Real time moving scene holographic camera system  
[NASA-CASE-MFS-21087-1] c14 N74-17153
- Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c14 N74-26946
- An optical process for producing classification maps from multispectral data  
[NASA-CASE-MSC-14472-1] c13 N74-32780
- Holographic system for nondestructive testing  
[NASA-CASE-MFS-21704-1] c35 N75-25124
- Real time, large volume, moving scene holographic camera system  
[NASA-CASE-MFS-22537-1] c35 N75-27328
- Holographic motion picture camera with Doppler shift compensation  
[NASA-CASE-MFS-22517-1] c35 N76-18402
- HOMING DEVICES**  
Location identification system with ground based transmitter and aircraft borne receiver/decoder  
[NASA-CASE-ERC-10324] c07 N72-25173
- HONEYCOMB CORES**  
Technique for making foldable, inflatable, plastic honeycomb core panels for use in building and bridge structures, light and radio wave reflectors, and spacecraft  
[NASA-CASE-XLA-03492] c15 N71-22713
- Heat treatment and tooling for forming shapes from thermosetting honeycomb core sheets  
[NASA-CASE-NPO-11036] c15 N72-24522
- Honeycomb core structures of minimum surface tubule sections  
[NASA-CASE-ERC-10363] c18 N72-25541
- HONEYCOMB STRUCTURES**  
Filling honeycomb matrix with deaerated paste filler  
[NASA-CASE-XMS-01108] c15 N69-24322
- Inflatable honeycomb panel element for lightweight structures usable in space stations and other construction  
[NASA-CASE-XLA-00204] c32 N70-36536
- Fluid flow control valve for regulating fluids in molecular quantities  
[NASA-CASE-XLE-00703] c15 N71-15967
- Method and apparatus for fabrication of heat insulating and ablative reentry structure  
[NASA-CASE-XMS-02009] c33 N71-20834
- Method for honeycomb panel bonding by thermosetting film adhesive with electrical heat means  
[NASA-CASE-XMF-01402] c18 N71-21651
- Development of thermal insulation material for insulating liquid hydrogen tanks in spacecraft  
[NASA-CASE-XMF-05046] c33 N71-28892
- Honeycomb panels of minimal surface, periodic tubule layers  
[NASA-CASE-ERC-10364] c18 N72-25540
- Development of process for bonding resinous body in cavities of honeycomb structures  
[NASA-CASE-MSC-12357] c15 N73-12489
- Technique for bonding --- process for molding silicone elastomer into fiberglass honeycomb panel  
[NASA-CASE-LAR-10073-1] c32 N74-23449
- Insert facing tool --- manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MFS-21485-1] c15 N74-25968
- HOOKS**  
Load regulating latch  
[NASA-CASE-MSC-19535-1] c37 N76-15463
- HOPPERS**  
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[NASA-CASE-LAR-10961-1] c15 N73-12496
- HORIZON SCANNERS**  
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[NASA-CASE-XLA-03724] c14 N69-27461
- Multi-lobar scan horizon sensor  
[NASA-CASE-XGS-00809] c21 N70-35427
- Attitude orientation control of spin stabilized final stage space vehicles, using horizon scanners  
[NASA-CASE-XLA-00281] c21 N70-36943
- Clamped amplifier circuit for horizon scanner enabling amplification and accurate measurement of specified parameters  
[NASA-CASE-XGS-01784] c10 N71-20782
- Horizon sensor design with digital sampling of spaced radiation-compensated thermopile infrared detectors  
[NASA-CASE-XNP-06957] c14 N71-21088
- Method and equipment for locating earth infrared horizon from space, independent of season and latitude  
[NASA-CASE-LAR-10726-1] c14 N73-20475
- HORIZONTAL SPACECRAFT LANDING**  
Delta winged, manned reentry vehicle capable of horizontal glide landing at low speeds  
[NASA-CASE-XLA-00241] c31 N70-37986
- HORIZONTAL TAIL SURFACES**  
Development and characteristics of translating horizontal tail assembly for supersonic aircraft  
[NASA-CASE-XLA-08801-1] c02 N71-11043
- HORN ANTENNAS**  
Device for improving efficiency of parabolic horn antenna system for linearly polarized signals  
[NASA-CASE-XNP-00611] c09 N70-35219
- Device for improving efficiency of parabolic reflector horn for linearly or circularly polarized waves  
[NASA-CASE-XNP-00540] c09 N70-35382
- Characteristics of antenna horn feeds consisting of central horn with overlapping peripheral horns  
[NASA-CASE-GSC-10452] c07 N71-12396
- Multiple mode horn antenna with radiation pattern of equal beamwidths and suppressed sidelobes  
[NASA-CASE-XNP-01057] c07 N71-15907
- Multipurpose microwave antenna, employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c07 N72-25174
- Horn antenna having V-shaped corrugated slots  
[NASA-CASE-LAR-11112-1] c32 N76-15330
- Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c32 N76-21365
- HOT CATHODES**  
Improved cathode containing barium carbonate block and heated tungsten screen for electron bombardment ion thruster  
[NASA-CASE-XLE-07087] c06 N69-39889
- HOT PRESSING**  
Cermet for nuclear fuel constructed by pressing metal coated ceramic particles in die at temperature to cause bonding of metal coatings, and tested for thermal stability  
[NASA-CASE-LEW-10219-1] c18 N71-28729
- HOT WORKING**  
Hot forming of plastic sheets  
[NASA-CASE-XMS-05516] c15 N71-17803
- HOT-WIRE ANEMOMETERS**  
Metallic hot wire anemometer and method for fabricating the same  
[NASA-CASE-ARC-10911-1] c35 N75-32426
- Method for making a hot wire anemometer and product thereof  
[NASA-CASE-ARC-10900-1] c35 N76-13455
- HOT-WIRE FLOWMETERS**  
Hot-wire liquid level detector for cryogenic propellants  
[NASA-CASE-XLE-00454] c23 N71-17802
- HOUSINGS**  
Sealed housing for protecting electronic equipment against electromagnetic interference  
[NASA-CASE-MSC-12168-1] c09 N71-18600
- Open type urine receptacle with tubular housing  
[NASA-CASE-MSC-12324-1] c05 N72-22093

- Readily assembled universal environment housing for electronic equipment  
[NASA-CASE-KSC-10031] c15 N72-22486
- Gas flow control device, including housing and input port  
[NASA-CASE-NPO-11479] c15 N73-13462
- Cryogenic gyroscope housing --- with annular disks for gas spin-up  
[NASA-CASE-MFS-21136-1] c23 N74-18323
- Heat transfer device  
[NASA-CASE-NPO-11120-1] c33 N74-18552
- HOVERING**
- Hovering type flying vehicle design and principle mechanisms for manned or unmanned use  
[NASA-CASE-MSC-12111-1] c02 N71-11039
- HUGENIOT EQUATION OF STATE**
- Determining particle density using known material Hugoniot curves  
[NASA-CASE-LAR-11059-1] c76 N75-12810
- HULLS (STRUCTURES)**
- Efficient operation of improved hydrofoil design  
[NASA-CASE-XLA-00229] c12 N70-33305
- HUMAN BEINGS**
- Method and apparatus for applying compressional forces to skeletal structure of subject to simulate force during ambulatory conditions  
[NASA-CASE-ARC-10100-1] c05 N71-24738
- Automatic braking device for rapidly transferring humans or materials from elevated location  
[NASA-CASE-XKS-07814] c15 N71-27067
- An improved load handling device  
[NASA-CASE-MFS-23233-1] c54 N75-33725
- HUMAN BODY**
- Apparatus for measuring human body mass in zero or reduced gravity environment  
[NASA-CASE-XMS-03371] c05 N70-42000
- Electromedical garment, applying vectorcardiologic type electrodes to human torsos for data recording during physical activity  
[NASA-CASE-XPR-10856] c05 N71-11189
- Thermoregulating with cooling flow pipe network for humans  
[NASA-CASE-XMS-10269] c05 N71-24147
- Tilting table for testing human body in variety of positions while exercising on ergometer or other biomedical devices  
[NASA-CASE-MFS-21010-1] c05 N73-30078
- HUMAN FACTORS ENGINEERING**
- Shock absorbing couch for body support under high acceleration or deceleration forces  
[NASA-CASE-XMS-01240] c05 N70-35152
- Harness assembly adapted to support man on ground based apparatus which simulates weightlessness  
[NASA-CASE-MFS-14671] c05 N71-12341
- Multiple circuit switch apparatus requiring minimum hand and eye movement by operator  
[NASA-CASE-XAC-03777] c10 N71-15909
- Remote control device operated by movement of finger tips for manual control of spacecraft attitude  
[NASA-CASE-XAC-02405] c09 N71-16089
- Design and development of flexible tunnel for use by spacecrews in performing extravehicular activities  
[NASA-CASE-MSC-12243-1] c05 N71-24728
- Development of apparatus and method for quantitatively measuring brain activity as automatic indication of sleep state and level of consciousness  
[NASA-CASE-MSC-13282-1] c05 N71-24729
- Recording apparatus  
[NASA-CASE-LAR-11353-1] c14 N74-20020
- HUMAN PERFORMANCE**
- Color perception tester for testing color code perceptiveness of individuals  
[NASA-CASE-KSC-10278] c05 N72-16015
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- Reaction tester for testing reaction to light stimuli  
[NASA-CASE-MSC-13604-1] c05 N73-13114
- HUMAN WASTES**
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[NASA-CASE-MFS-22102-1] c05 N74-20725
- Automatic biowaste sampling  
[NASA-CASE-MSC-14640-1] c54 N76-14804
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- Adaptive voting computer system  
[NASA-CASE-MSC-13932-1] c08 N74-14920
- HYBRID PROPELLANTS**
- Liner for hybrid solid propellants to bind propellant to rocket motor case  
[NASA-CASE-XNP-09744] c27 N71-16392
- HYDRAULIC CONTROL**
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[NASA-CASE-MFS-10412] c12 N71-17578
- Throttle valve for regulating fluid flow volume  
[NASA-CASE-XNP-09698] c15 N71-18580
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[NASA-CASE-ERC-10031] c12 N71-18603
- Development and characteristics of variable displacement fluid pump for transforming hydraulic pressures  
[NASA-CASE-MFS-20830] c15 N71-30028
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[NASA-CASE-XNP-01772] c11 N70-41677
- Hydraulic support apparatus for dynamic testing of space vehicles under near-free flight conditions  
[NASA-CASE-XNP-03248] c11 N71-10604
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[NASA-CASE-XMS-03252] c15 N71-10658
- Antibacklash circuit for hydraulic drive system  
[NASA-CASE-XNP-01020] c03 N71-12260
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[NASA-CASE-XLA-05100] c15 N71-17696
- Design and development of double acting shock absorber for spacecraft docking operations  
[NASA-CASE-XMS-03722] c15 N71-21530
- Hydraulic apparatus for casting and molding of liquid polymers  
[NASA-CASE-XNP-07659] c06 N71-22975
- System to control speed of hydraulically movable members by limiting energy applied to actuators with hydraulic servo loop  
[NASA-CASE-ARC-10131-1] c15 N71-27754
- Development of aircraft control system with high performance electrically controlled and mechanically operated hydraulic valves for precise flight operation  
[NASA-CASE-XAC-00048] c02 N71-29128
- Development and characteristics of variable displacement fluid pump for transforming hydraulic pressures  
[NASA-CASE-MFS-20830] c15 N71-30028
- Design and characteristics of mechanically extended and telescoping boom on crane assembly  
[NASA-CASE-NPO-11118] c03 N72-25021
- Design and development of device to prevent geysering during convective circulation of cryogenic fluids  
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- Redundant hydraulic control system for actuators with three main valve combination  
[NASA-CASE-MFS-20944] c15 N73-13466
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- Servo valve  
[NASA-CASE-LAR-11643-1] c37 N75-13268
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[NASA-CASE-NPO-13201-1] c37 N75-15050
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- Rubber composition for expulsion bladders and diaphragms for use with hydrazine  
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## HYDROCARBONS

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- [NASA-CASE-XLA-00327] c25 N71-29184
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- [NASA-CASE-MSC-12178-1] c09 N71-13518
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- [NASA-CASE-XNP-00249] c28 N70-38249
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- [NASA-CASE-XNP-00876] c28 N70-41311
- Sustained arc ignition system --- across a spark gap
- [NASA-CASE-LEW-12444-1] c33 N75-25056
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- Test chamber for determining decomposition and autoignition of materials, used in spacecraft under controlled environmental conditions
- [NASA-CASE-KSC-10198] c11 N71-28629
- ILLUMINATORS**
- Camera adapter design for image magnification including lens and illuminator
- [NASA-CASE-XMF-03844-1] c14 N71-26474
- Illumination system design for use as sunlight simulator in space environment simulators with multiple light sources reflected to single virtual source
- [NASA-CASE-HQN-10781] c23 N71-30292
- IMAGE CONTRAST**
- Video signal enhancement of signal component representing brightness of scene element in low contrast
- [NASA-CASE-NPO-10343] c07 N71-27341
- Method and apparatus for controlling the contrast of a photographic transparency
- [NASA-CASE-GSC-11989-1] c35 N76-16395
- IMAGE CONVERTERS**
- Real time liquid crystal image converter
- [NASA-CASE-LAR-11206-1] c23 N74-30118
- Resistive anode image converter
- [NASA-CASE-HQN-10876-1] c35 N75-19621
- Deep trap, laser activated image converting system
- [NASA-CASE-NPO-13131-1] c36 N75-19652
- IMAGE CORRELATORS**
- Multiple pattern holographic information storage and readout system
- [NASA-CASE-BRC-10151] c16 N71-29131
- Automatic focus control for facsimile cameras
- [NASA-CASE-LAR-11213-1] c35 N75-15014
- IMAGE DISSECTOR TUBES**
- Apparatus for calibrating an image dissector tube
- [NASA-CASE-MFS-22208-1] c33 N75-26244
- Electronic optical transfer function analyzer
- [NASA-CASE-MFS-21672-1] c74 N76-19935
- IMAGE ENHANCEMENT**
- Electron beam scanning system for improved image definition and reduced power requirements for video signal transmission
- [NASA-CASE-BRC-10552] c09 N71-12539
- Physical correction filter for improving the optical quality of an image
- [NASA-CASE-HQN-10542-1] c74 N75-25706
- IMAGE FILTERS**
- Filter arrangement for controlling light intensity in motion picture camera used in optical pyrometry
- [NASA-CASE-XLA-00062] c14 N70-33254
- Physical correction filter for improving the optical quality of an image
- [NASA-CASE-HQN-10542-1] c74 N75-25706
- Method and system for producing chroma signals
- [NASA-CASE-MSC-14683-1] c74 N75-33835
- IMAGE TUBES**
- Image tube --- deriving electron beam replica of image
- [NASA-CASE-GSC-11602-1] c09 N74-21850
- Method and system for producing chroma signals
- [NASA-CASE-MSC-14683-1] c74 N75-33835
- IMAGES**
- Camera adapter design for image magnification including lens and illuminator
- [NASA-CASE-XMF-03844-1] c14 N71-26474
- Stereoscopic television system, including projecting pair of binocular images
- [NASA-CASE-ARC-10160-1] c23 N72-27728
- IMAGING TECHNIQUES**
- Highly stable optical mirror assembly optimizing image quality of light diffraction patterns
- [NASA-CASE-BRC-10001] c23 N71-24868
- Noise elimination in coherent imaging system by axial rotation of optical lens for spectral distribution of degrading affects
- [NASA-CASE-GSC-11133-1] c23 N72-11568
- Phototransistor imaging system with mosaic of phototransistors on semiconductor substrate
- [NASA-CASE-MFS-20809] c23 N73-13660
- Computerized optical system for producing multiple images of a scene simultaneously
- [NASA-CASE-MSC-12404-1] c23 N73-13661
- Optical imaging system for increasing light absorption efficiency of imaging detector
- [NASA-CASE-ARC-10194-1] c23 N73-20741
- Device for displaying and recording angled views of samples to be viewed by microscope
- [NASA-CASE-GSC-11690-1] c14 N73-28499
- Ritchey-Chretien telescope responsive to images located off telescope optical axis
- [NASA-CASE-GSC-11487-1] c14 N73-30393
- Data storage, image tube type
- [NASA-CASE-MSC-14053-1] c08 N74-12888
- Optical instruments
- [NASA-CASE-MSC-14096-1] c14 N74-15095
- Field sequential stereo television
- [NASA-CASE-MSC-12616-1] c07 N74-32601

## SUBJECT INDEX

## INERTIAL GUIDANCE

- Charge-coupled device data processor for an airborne imaging radar system  
[NASA-CASE-NPO-13587-1] c32 N75-26206
- IMIDES**  
Synthesis and chemical properties of imidazopyrrolone/imide copolymers  
[NASA-CASE-XLA-08802] c06 N71-11238  
Molding process for imidazopyrrolone polymers  
[NASA-CASE-LAR-10547-1] c15 N74-13177
- IMINES**  
Synthesis of polymeric schiff bases by schiff-base exchange reactions  
[NASA-CASE-XMP-08651] c06 N71-11236  
Direct synthesis of polymeric schiff bases from two amines and two aldehydes  
[NASA-CASE-XMP-08655] c06 N71-11239  
Synthesis of schiff bases for heat shields by acetal amine reactions  
[NASA-CASE-XMP-08652] c06 N71-11243  
Synthesis of aromatic diamines and dialdehyde polymers using Schiff base  
[NASA-CASE-XMP-03074] c06 N71-24740
- IMMOBILIZATION**  
Stretcher with rigid head and neck support with capability of supporting immobilized person in vertical position for removal from vehicle hatch to exterior also useful as splint stretcher  
[NASA-CASE-XMP-06589] c05 N71-23159  
Absolute focus locking device for microscopes to maintain set focus for extended time period  
[NASA-CASE-LAR-10184] c14 N72-22445
- IMPACT**  
Shock absorber for use as protective barrier in impact energy absorbing system  
[NASA-CASE-NPO-10671] c15 N72-20443  
System for detecting impact position of cosmic dust on detector surface  
[NASA-CASE-GSC-11291-1] c25 N72-33696  
Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c35 N75-27331
- IMPACT ACCELERATION**  
Suspended mass oscillation damper based on impact energy absorption for damping wind induced oscillations of tall stacks, antennas, and umbilical towers  
[NASA-CASE-LAR-10193-1] c15 N71-27146
- IMPACT DAMAGE**  
Measuring micrometeoroid depth of penetration into various materials  
[NASA-CASE-XLA-00941] c14 N71-23240
- IMPACT LOADS**  
Piezoelectric transducer for detecting and measuring micrometeoroids  
[NASA-CASE-XAC-01101] c14 N70-41957  
Impact testing machine for imparting large impact forces on high velocity packages  
[NASA-CASE-XNP-04817] c14 N71-23225
- IMPACT RESISTANCE**  
Electric storage battery with high impact resistance  
[NASA-CASE-NPO-11021] c03 N72-20032
- IMPACT STRENGTH**  
High impact pressure regulator having minimum number of lightweight movable elements  
[NASA-CASE-NPO-10175] c14 N71-18625
- IMPACT TESTING MACHINES**  
Development and characteristics of pentrometer for measuring physical properties of lunar surface  
[NASA-CASE-XLA-00934] c14 N71-22765  
Impact testing machine for imparting large impact forces on high velocity packages  
[NASA-CASE-XNP-04817] c14 N71-23225
- IMPACT TOLERANCES**  
High impact antennas with high radiating efficiency  
[NASA-CASE-NPO-10231] c07 N71-26101
- IMPEDANCE MATCHING**  
Impedance transformation device for signal mixing  
[NASA-CASE-XGS-01110] c07 N69-24334  
Reflectometer for receiver input impedance match measurement  
[NASA-CASE-XNP-10843] c07 N71-11267  
Radio frequency coaxial filter to provide dc isolation and low frequency signal rejection in audio range  
[NASA-CASE-XGS-01418] c09 N71-23573
- Pattern and impedance matching improvements in transversely polarized triaxial antenna  
[NASA-CASE-XGS-02290] c07 N71-28809
- IMPEDANCE MEASUREMENTS**  
Development of electrical system for measuring high impedance  
[NASA-CASE-XMS-08589-1] c09 N71-20569
- IMPLANTATION**  
Biotelemetry apparatus with dual voltage generators for implanting in animals  
[NASA-CASE-XAC-05706] c05 N71-12342
- IMPLOSIONS**  
Implosion driven, light gas, hypervelocity gun  
[NASA-CASE-XAC-05902] c11 N71-18578
- IMPURITIES**  
Fabrication of sintered impurity semiconductor brushes for electrical energy transfer  
[NASA-CASE-XMP-01016] c26 N71-17818
- INCIDENT RADIATION**  
Scattering independent determination of absorption and emission coefficients and radiative equilibrium state  
[NASA-CASE-NPO-13677-1] c35 N75-16791  
Frequency scanning particle size spectrometer  
[NASA-CASE-NPO-13606-1] c35 N75-19627
- INCLINATION**  
Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c02 N74-34475
- INCOHERENT SCATTERING**  
Rapidly pulsed, high intensity, incoherent light source  
[NASA-CASE-XLE-2529-3] c09 N74-20859
- INDICATING INSTRUMENTS**  
Controlled caging and uncaging mechanism for remote instrument control  
[NASA-CASE-GSC-11063-1] c03 N70-35584  
Piezoelectric means for missile stage separation indication and stage initiation  
[NASA-CASE-XLA-00791] c03 N70-39930  
Inductive liquid level detection system  
[NASA-CASE-XLE-01609] c14 N71-10500  
Apparatus for determining quality of bond between high density material and low density material  
[NASA-CASE-MPS-13686] c15 N71-18132  
Device for detecting hydrogen fires onboard high altitude rockets  
[NASA-CASE-MFS-13130] c10 N72-17173
- INDUCTANCE**  
Current dependent variable inductance for input filter chokes of ac or dc power supplies  
[NASA-CASE-ERC-10139] c09 N72-17154  
Inductance device with vacuum insulation and materials of low gas entrapping capability  
[NASA-CASE-LEW-10330-1] c09 N72-27226
- INDUCTION HEATING**  
Induction heating of metallurgical specimens to high temperatures in coil furnace  
[NASA-CASE-XLE-04026] c14 N71-23267
- INDUCTION MOTORS**  
Voltage controlled oscillator circuit for two-phase induction motor control  
[NASA-CASE-MFS-21465-1] c10 N73-32145  
Variable frequency inverter for ac induction motors with torque, speed and braking control  
[NASA-CASE-MFS-22088-1] c33 N75-15874
- INDUCTORS**  
Inductive liquid level detection system  
[NASA-CASE-XLE-01609] c14 N71-10500  
Describing apparatus used in vacuum deposition of thin film inductive windings for spacecraft microcircuitry  
[NASA-CASE-XMP-01667] c15 N71-17647  
Double-induction variable speed system for constant-frequency electrical power generation  
[NASA-CASE-ERC-10065] c09 N71-27364
- INDUSTRIAL PLANTS**  
Simplified technique and device for producing industrial grade synthetic diamonds  
[NASA-CASE-MFS-20698-2] c15 N73-19457
- INERTIA**  
Gearing system for eliminating backlash and filtering input torque fluctuations from high inertia load  
[NASA-CASE-XGS-04227] c15 N71-21744
- INERTIAL GUIDANCE**  
Hermetically sealed vibration damper design for use in gimbal assembly of spacecraft inertial guidance system

[NASA-CASE-MSC-10959] c15 N71-26243

**INERTIAL PLATFORMS**

Inertial component clamping assembly design for spacecraft guidance and control system mounting [NASA-CASE-XMS-02184] c15 N71-20813

Inertial gimbals alignment system for spacecraft guidance [NASA-CASE-XMF-01669] c21 N71-23289

Temperature compensated digital inertial sensor --- circuit for maintaining inertial element of gyroscope or accelerometer at constant position [NASA-CASE-NPO-13044-1] c14 N74-15094

An attitude control system [NASA-CASE-MFS-22787-1] c21 N74-35096

**INERTIAL REFERENCE SYSTEMS**

Development of attitude control system for spacecraft orientation [NASA-CASE-XGS-04393] c21 N71-14159

Large amplitude, linear inertial reference system of vibrating string type for spacecraft reference plane [NASA-CASE-XAC-03107] c23 N71-16098

**INFLATABLE SPACECRAFT**

Passive thermal control coating on aluminum foil laminate for inflatable spacecraft surfaces [NASA-CASE-XLA-01291] c33 N70-36617

Erectable, inflatable, radio signal reflecting passive communication satellite [NASA-CASE-XLA-00210] c30 N70-40309

Rotating, multisided mandrel for fabricating gored inflatable spacecraft [NASA-CASE-XLA-04143] c15 N71-17687

Forming inflatable panels erectable in space for passive communication satellite [NASA-CASE-XLA-03497] c15 N71-23052

Development and characteristics of inflatable structure to provide escape from orbit for spacecrews under emergency conditions [NASA-CASE-XMS-06162] c31 N71-28851

**INFLATABLE STRUCTURES**

Aeroflexible wing structure with air scoop for inflating stiffeners with ram air [NASA-CASE-XLA-06095] c01 N69-39981

Design of inflatable life raft for aircrafts and boats [NASA-CASE-XMS-00863] c05 N70-34857

Lightweight life preserver without fastening devices [NASA-CASE-XMS-00864] c05 N70-36493

Inflatable honeycomb panel element for lightweight structures usable in space stations and other construction [NASA-CASE-XLA-00204] c32 N70-36536

Inflatable radar reflector unit - lightweight, highly reflective to electromagnetic radiation, and adaptable for erection and deployment with minimum effort and time [NASA-CASE-XMS-00893] c07 N70-40063

Temperature sensor warning system for pneumatic tires of aircraft and ground vehicles [NASA-CASE-XLA-01926] c14 N71-15620

Inflation system for balloon type satellites [NASA-CASE-XGS-03351] c31 N71-16081

Development and characteristics of protective coatings for spacecraft [NASA-CASE-XNP-02507] c31 N71-17679

Development and characteristics of self supporting space vehicle [NASA-CASE-XLA-00117] c31 N71-17680

Conforming polisher for aspheric surfaces of revolution with inflatable tube [NASA-CASE-XGS-02884] c15 N71-22705

Technique for making foldable, inflatable, plastic honeycomb core panels for use in building and bridge structures, light and radio wave reflectors, and spacecraft [NASA-CASE-XLA-03492] c15 N71-22713

Collapsible antenna boom and coaxial transmission line having inflatable inner tube [NASA-CASE-MFS-20068] c07 N71-27191

Space expandable tether device for use as passageway between two docked spacecraft [NASA-CASE-XMS-10993] c15 N71-28936

Inflatable rocket engine nozzle skirt with transpiration cooling [NASA-CASE-MFS-20619] c28 N72-11708

Modification of one man life raft [NASA-CASE-LAR-10241-1] c05 N74-14845

**INFORMATION RETRIEVAL**

Multiple pattern holographic information storage and readout system [NASA-CASE-ERC-10151] c16 N71-29131

**INFRARED DETECTORS**

Temperature sensitive capacitor device for detecting very low intensity infrared radiation [NASA-CASE-XNP-09750] c14 N69-39937

Sight switch using infrared source and sensor mounted beside eye [NASA-CASE-XMF-03934] c09 N71-22985

Characteristics of infrared photodetectors manufactured from semiconductor material irradiated by electron beam [NASA-CASE-LAR-10728-1] c14 N73-12445

Doped Josephson tunneling junction for use in a sensitive IR detector [NASA-CASE-NPO-13348-1] c33 N75-31332

**INFRARED INSTRUMENTS**

Infrared scanning system for maintaining spacecraft orientation with earth reference [NASA-CASE-XLA-00120] c21 N70-33181

**INFRARED LASERS**

Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver [NASA-CASE-NPO-11919-1] c14 N74-11284

**INFRARED RADIATION**

High speed infrared furnace [NASA-CASE-XLE-10466] c17 N69-25147

High field CdS detector for infrared radiation [NASA-CASE-LAR-11027-1] c14 N74-18088

**INFRARED SCANNERS**

Infrared scanning system for maintaining spacecraft orientation with earth reference [NASA-CASE-XLA-00120] c21 N70-33181

Method and equipment for locating earth infrared horizon from space, independent of season and latitude [NASA-CASE-LAR-10726-1] c14 N73-20475

**INFRARED SPECTRA**

Diatomic infrared gasdynamic laser --- for producing different wavelengths [NASA-CASE-ARC-10370-1] c36 N75-31426

**INFRARED SPECTROMETERS**

Telespectrograph for analyzing upper atmosphere by tracking bodies reentering atmosphere at high velocities [NASA-CASE-XLA-03273] c14 N71-18699

**INFRARED SPECTROSCOPY**

Polymer coatings for moisture protection of optical windows in infrared spectroscopy [NASA-CASE-ARC-10749-1] c23 N73-32542

**INFRASONIC FREQUENCIES**

Resonant infrasonic gauging device for measuring liquid quantity in closed bladderless reservoir [NASA-CASE-MSC-11847-1] c14 N72-11363

**INGESTION (BIOLOGY)**

Ingestible miniaturized telemetry device for deep body temperature measurements on humans and animals [NASA-CASE-ARC-10583-1] c05 N73-14093

**INITIATORS (EXPLOSIVES)**

Piezoelectric means for missile stage separation indication and stage initiation [NASA-CASE-XLA-00791] c03 N70-39930

Electroexplosive safe-arm initiator using electric driven electromagnetic coils and magnets to align charge [NASA-CASE-LAR-10372] c09 N71-18599

**INJECTION**

Foam insulation thickness measuring and injection device for spacecraft applications [NASA-CASE-MFS-20261] c14 N71-27005

**INJECTORS**

Propellant injectors for rocket combustion chambers [NASA-CASE-XLE-00103] c28 N70-33241

Fuel injection system for maximum combustion efficiency of rocket engines [NASA-CASE-XLE-00111] c28 N70-38199

Injector manifold assembly for bipropellant rocket engines providing for fuel propellant to serve as coolant [NASA-CASE-XMF-00148] c28 N70-38710

Method and apparatus for use in forming highly collimated beam of microparticles with high charge to mass ratio and injecting beam into electrostatic accelerating tube [NASA-CASE-XGS-06628] c24 N71-16213

# SUBJECT INDEX

# INSULATION

Control valve and coaxial variable injector for controlling bipropellant mixture ratio and flow [NASA-CASE-XNP-09702] c15 N71-17654

Rocket engine injector orifice to accommodate changes in density, velocity, and pressure, thereby maintaining constant mass flow rate of propellant into rocket combustion chamber [NASA-CASE-XLE-03157] c28 N71-24736

Bipropellant injector with pair of concave deflector plates [NASA-CASE-XNP-09461] c28 N72-23809

Coaxial injector for mixing liquid propellants within combustion chambers [NASA-CASE-NPO-11095] c15 N72-25455

Improved injector with porous plug for bubbles of gas into feed lines of electrically conductive liquid [NASA-CASE-NPO-11377] c15 N73-27406

**INLET FLOW**

High pressure four-way valve with O ring adapted to pass across inlet port [NASA-CASE-XNP-00214] c15 N70-36908

Method for maintaining good performance in gas turbine during air flow distortion [NASA-CASE-LEW-10286-1] c28 N71-28915

Airflow control system for supersonic inlets [NASA-CASE-LEW-11188-1] c02 N74-20646

Variably positioned guide vanes for aerodynamic choking [NASA-CASE-LAR-10642-1] c28 N74-31270

Method for fabricating a mass spectrometer inlet leak [NASA-CASE-GSC-12077-1] c35 N76-13465

Shock position sensor for supersonic inlets --- measuring pressure in the throat of a supersonic inlet [NASA-CASE-LEW-11915-1] c35 N76-14431

**INLET PRESSURE**

Fluid jet amplifier with fluid from jet nozzle deflected by inlet pressure [NASA-CASE-XLE-03512] c12 N69-21466

Shock position sensor for supersonic inlets --- measuring pressure in the throat of a supersonic inlet [NASA-CASE-LEW-11915-1] c35 N76-14431

**INOCULATION**

Automatic inoculating apparatus --- includes movable carriage, drive motor, and swabbing motor [NASA-CASE-LAR-11074-1] c51 N75-13502

**INORGANIC COATINGS**

Composition of diffuse reflective coating containing sodium chloride in combination with diol solvent and organic wetting and drying agents [NASA-CASE-GSC-11214-1] c06 N73-13128

**INORGANIC COMPOUNDS**

Inorganic ion exchange membrane electrolytes for fuel cell use [NASA-CASE-XNP-04264] c03 N69-21337

Preparation of inorganic solid film lubricants with long wear life and stability in aerospace environments [NASA-CASE-XMP-03988] c15 N71-21403

Modification of polyurethanes with alkyl halide resins, inorganic salts, and encapsulated volatile and reactive halogen for fuel fire control [NASA-CASE-ARC-10098-1] c06 N71-24739

Inorganic thermal control and solar reflector coatings [NASA-CASE-MPS-20011] c18 N72-22566

**INPUT**

Apparatus for filtering input signals [NASA-CASE-NPO-10198] c09 N71-24806

RC networks with voltage amplifier, RC input circuit, and positive feedback [NASA-CASE-ARC-10020] c10 N72-17172

**INPUT/OUTPUT ROUTINES**

Analog to digital converter [NASA-CASE-NPO-13385-1] c33 N76-18345

**INSERTION LOSS**

High impedance alternating current sensing transformer device between two bolometers for measuring insertion loss of test component [NASA-CASE-XNP-01193] c10 N71-16057

**INSTRUMENT ERRORS**

Solar radiation direction detector and device for compensating degradation of photocells

[NASA-CASE-XLA-00183] c14 N70-40239

**INSTRUMENT FLIGHT RULES**

Controlled visibility device for simulating poor visibility conditions in training pilots in instrument landing and flight procedures [NASA-CASE-XPR-04147] c11 N71-10748

**INSTRUMENT ORIENTATION**

Sensor consisting of photocells mounted on pyramidal base for improved pointing accuracy of planetary trackers [NASA-CASE-XNP-04180] c07 N69-39736

Inertial gimbal alignment system for spacecraft guidance [NASA-CASE-XMP-01669] c21 N71-23289

Optical gauging system for monitoring machine tool alignment [NASA-CASE-XAC-09489-1] c15 N71-26673

Development of solar energy powered heliotrope assembly to orient solar array toward sun [NASA-CASE-GSC-10945-1] c21 N72-31637

**INSTRUMENT PACKAGES**

Apparatus for ejecting covers of instrument packages using differential pressure principle [NASA-CASE-XMP-04132] c15 N69-27502

Removable potting compound for instrument shock protection [NASA-CASE-XLA-00482] c15 N70-36409

Plastic foam generator for space vehicle instrument payload package flotation in water landing [NASA-CASE-XLA-00838] c03 N70-36778

High velocity guidance and spin stabilization gyro controlled jet reaction system for launch vehicle payloads [NASA-CASE-XLA-01339] c31 N71-15692

Ethylene oxide sterilization and encapsulating process for sterile preservation of instruments and solid propellants [NASA-CASE-XNP-09763] c14 N71-20461

**INSTRUMENTS**

Method and apparatus for bowing of instrument panels to improve radio frequency shielded enclosure [NASA-CASE-XMP-09422] c07 N71-19436

Design and development of pressure sensor for measuring differential pressures of few pounds per square inch [NASA-CASE-XMP-01974] c14 N71-22752

Development of temperature compensated thrust measuring gage for measuring forces as function of time in environment with varying temperature [NASA-CASE-XGS-02319] c14 N71-22965

Development and characteristics of self-calibrating displacement transducer for measuring magnitude and frequency of displacement of bodies [NASA-CASE-XLA-00781] c09 N71-22999

Design, development, and characteristics of pressure and temperature sensor operating immersed in fluid flow [NASA-CASE-LEW-10281-1] c14 N72-17327

Development of apparatus for mounting scientific experiments in spacecraft to permit utilization without maneuvering spacecraft [NASA-CASE-MSC-12372-1] c31 N72-25842

**INSULATED STRUCTURES**

Low thermal loss piping arrangement for moving cryogenic media through double chamber structure [NASA-CASE-XNP-08882] c15 N69-39935

**INSULATION**

Electrode attached to helmets for detecting low level signals from skin of living creatures [NASA-CASE-ARC-10043-1] c05 N71-11193

Characteristics of foamed-in-place ceramic refractory insulating material and method of fabrication [NASA-CASE-XGS-02435] c18 N71-22998

Method of fabricating equal length insulated wire [NASA-CASE-FRC-10038] c15 N72-20444

Inductance device with vacuum insulation and materials of low gas entrapping capability [NASA-CASE-LEW-10330-1] c09 N72-27226

Ceramic coating for silica insulation [NASA-CASE-MSC-14270-2] c18 N74-30004

Insulated electrocardiographic electrodes --- without paste electrolyte [NASA-CASE-MSC-14339-1] c05 N75-24716

## INSULATORS

High voltage insulators for direct current in acceleration system of electrostatic thruster  
[NASA-CASE-XLE-01902] c28 N71-10574  
High temperature resistant cermet and ceramic compositions --- for use in thermionic converters or diodes  
[NASA-CASE-NPO-13690-1] c27 N76-13294

## INTAKE SYSTEMS

Deflector for preventing objects from entering nacelle inlets of jet aircraft  
[NASA-CASE-XLE-00388] c28 N70-34788  
Jet engine air intake system  
[NASA-CASE-ARC-10761-1] c07 N75-31108

## INTEGRATED CIRCUITS

Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits  
[NASA-CASE-XNP-01753] c08 N71-22897  
Development and characteristics of electric circuitry for detecting electrical pulses rise time and amplitude  
[NASA-CASE-XMF-08804] c09 N71-24717  
Method and apparatus for testing integrated circuit microtab welds  
[NASA-CASE-ARC-10176-1] c15 N72-21464  
Single integrated circuit chip with field effect transistor  
[NASA-CASE-GSC-10835-1] c09 N72-33205  
Integrated circuit tangent function generator  
[NASA-CASE-MSC-13907-1] c10 N73-26230  
Inverted geometry transistor for use with monolithic integrated circuit  
[NASA-CASE-ARC-10330-1] c09 N73-32112  
Integrated circuit package with lead structure and method of preparing the same  
[NASA-CASE-MPS-21374-1] c10 N74-12951  
Integrated P-channel MOS gyrator  
[NASA-CASE-MPS-22343-1] c09 N74-34638  
Four phase logic systems --- including integrated microcircuits  
[NASA-CASE-MSC-14240-1] c33 N75-14957  
Integrable power gyrator --- with Z-matrix design using parallel transistors  
[NASA-CASE-MPS-22342-1] c33 N75-30428

## INTEGRATORS

Solid state operational integrator  
[NASA-CASE-NPO-10230] c09 N71-12520  
Variable duration pulse integrator design for integrating pulse duration modulated pulses with elimination of ripple content  
[NASA-CASE-XLA-01219] c10 N71-23084  
Solid state integrator for converting variable width pulses into analog voltage  
[NASA-CASE-XLA-03356] c10 N71-23315  
Feedback integrating circuit with grounded capacitor for signal processing  
[NASA-CASE-XAC-10607] c10 N71-23669  
High speed phase detector design indicating phase relationship between two square wave input signals  
[NASA-CASE-XNP-01306-2] c09 N71-24596

## INTERFEROMETERS

Describing device for velocity control of electromechanical drive mechanism of scanning mirror of interferometer  
[NASA-CASE-XGS-03532] c14 N71-17627  
Incremental motion drive system applied to interferometer components  
[NASA-CASE-XNP-06897] c15 N71-17694  
Design and development of optical interferometer with laser light source for application to schlieren systems  
[NASA-CASE-XLA-04295] c16 N71-24170  
Digital sensor for counting fringes produced by interferometers with improved sensitivity and one photomultiplier tube to eliminate alignment problem  
[NASA-CASE-LAR-10204] c14 N71-27215  
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[NASA-CASE-NPO-10070] c15 N71-27372  
Development of variable angle device for  
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[NASA-CASE-LAR-10507-1] c11 N72-25284  
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[NASA-CASE-NPO-10633] c03 N72-28025  
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[NASA-CASE-LAR-10195-1] c15 N73-19458  
Automatic real-time pair-feeding system for  
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Automated single-slide staining device  
[NASA-CASE-LAR-11649-1] c51 N76-13725

## LAMINAR FLOW

Laminar flow of liquid coolants in rocket engines  
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boards  
[NASA-CASE-MFS-20408] c18 N73-12604  
Development of composite structures for  
spacecraft to serve as anti-meteoroid device  
[NASA-CASE-LAR-10788-1] c31 N73-20880  
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preparing the same --- resistant to ionizing  
radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364-1] c15 N74-18126  
Method of laminating structural members  
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[NASA-CASE-ARC-10813-1] c27 N76-16230  
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[NASA-CASE-MFS-23229-1] c24 N76-19231  
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[NASA-CASE-XMS-01994-1] c14 N72-17326  
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[NASA-CASE-ARC-10179-1] c21 N72-22619  
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distributing portion in landing gear systems  
of space vehicles  
[NASA-CASE-XNP-03856] c31 N70-34159  
Nose gear steering system for vehicles with main  
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loss of aerodynamic control  
[NASA-CASE-XLA-01804] c02 N70-34160  
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[NASA-CASE-XNP-02853] c31 N70-36654  
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[NASA-CASE-XNP-01045] c15 N70-40354  
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[NASA-CASE-XNP-01045] c15 N70-40354  
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- Calibrator for measuring and modulating or demodulating laser outputs  
[NASA-CASE-XLA-03410] c16 N71-25914
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- Apparatus for scanning the surface of a cylindrical body  
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[NASA-CASE-MFS-11279] c16 N71-20400
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[NASA-CASE-HQN-10541-1] c07 N71-26291
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[NASA-CASE-GSC-12083-1] c36 N76-15451
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[NASA-CASE-XLA-00679] c15 N70-38601
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[NASA-CASE-XMS-04935] c05 N71-11190
- Quick disconnect latch and handle combination for mounting articles on walls or supporting bases in spacecraft under zero gravity conditions  
[NASA-CASE-MFS-11132] c15 N71-17649
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[NASA-CASE-XMS-03745] c15 N71-21076
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[NASA-CASE-MSC-15474-1] c15 N71-26162
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- Star sensor system for roll attitude control of spacecraft  
[NASA-CASE-XNP-01307] c21 N70-41856
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[NASA-CASE-XLA-08967] c02 N71-27088
- Transonic and supersonic aircraft wherein the problems of roll control at high angles of attack are minimized  
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[NASA-CASE-ARC-10716-1] c31 N73-32784
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# LAUNCH ESCAPE SYSTEMS

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## LAUNCH ESCAPE SYSTEMS

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[NASA-CASE-XLA-02704] c11 N69-21540
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[NASA-CASE-XMF-02307] c14 N71-10779
- LAUNCHING PADS**
  - Launch pad missile release system with bending moment change rate reduction in thrust distribution structure at liftoff  
[NASA-CASE-XMF-03198] c30 N70-40353
  - Remotely actuated quick disconnect for tubular umbilical conduits used to transfer fluids from ground to rocket vehicle  
[NASA-CASE-XLA-01396] c03 N71-12259
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[NASA-CASE-XKS-10543] c07 N71-26292
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  - Bonding method for improving contact between lead telluride thermoelectric elements and tungsten electrodes  
[NASA-CASE-XGS-04554] c15 N69-39786
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[NASA-CASE-XGS-05718] c26 N71-16037
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[NASA-CASE-XPR-09479] c14 N69-27503
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[NASA-CASE-XMF-02307] c14 N71-10779
  - Fluid leakage detection system with automatic monitoring capability  
[NASA-CASE-LAR-10323-1] c12 N71-17573
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[NASA-CASE-XAC-07043] c05 N71-23161
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[NASA-CASE-XMF-02392] c32 N71-24285
  - Gas leak detection in evacuated systems using ultraviolet radiation probe  
[NASA-CASE-ERC-10034] c15 N71-24896
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  - Lens assembly for solar furnace or solar simulator  
[NASA-CASE-XNP-04111] c14 N71-15622
  - Camera adapter design for image magnification including lens and illuminator  
[NASA-CASE-XMF-03844-1] c14 N71-26474
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[NASA-CASE-GSC-10700] c23 N71-30027
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[NASA-CASE-GSC-11133-1] c23 N72-11568
  - Photographic film restoration system using Fourier transformation lenses and spatial filter  
[NASA-CASE-MSC-12448-1] c14 N72-20394
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[NASA-CASE-XGS-00260] c31 N70-37924
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  - Hot-wire liquid level detector for cryogenic propellants  
[NASA-CASE-XLE-00454] c23 N71-17802
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  - Gauge for measuring quantity of liquid in spherical tank in reduced gravity  
[NASA-CASE-XMS-06236] c14 N71-21007
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[NASA-CASE-XMF-14301] c09 N71-23188
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  - Development of adjustable attitude guide block for setting pins perpendicular to irregular convex work surface  
[NASA-CASE-XLA-07911] c15 N71-15571
  - Electrical switching device comprising conductive liquid confined within square loop of deformable nonconductive tubing also used for leveling  
[NASA-CASE-NPO-10037] c09 N71-19610
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[NASA-CASE-LEW-11087-3] c15 N74-21064
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  - Describing method for lyophilization of luciferase containing mixtures for use in life detection reactions  
[NASA-CASE-XGS-05532] c06 N71-17705
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[NASA-CASE-XMS-00863] c05 N70-34857
  - Inflatable stabilizing system for use on life raft to reduce rocking and preclude capsizing  
[NASA-CASE-MSC-12393-1] c02 N73-26006
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[NASA-CASE-LAR-10241-1] c05 N74-14845
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  - Shock absorbing couch for body support under high acceleration or deceleration forces  
[NASA-CASE-XMS-01240] c05 N70-35152
  - Portable environmental control and life support system for astronaut in and out of spacecraft  
[NASA-CASE-XMS-09632-1] c05 N71-11203
  - Design and development of flexible tunnel for use by spacecrews in performing extravehicular activities  
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[NASA-CASE-XMS-09637-1] c05 N71-24730
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[NASA-CASE-XMS-06162] c31 N71-28851
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[NASA-CASE-XLA-08913] c14 N71-28933
- Open loop life support subsystem using breathing bag as reservoir for EVA  
[NASA-CASE-MSC-12411-1] c05 N72-20096
- Device for removing air from water for use in life support systems in manned space flight  
[NASA-CASE-XLA-08914] c15 N73-12492
- Intra- and extravehicular life support space suite for Apollo astronauts  
[NASA-CASE-MSC-12609-1] c05 N73-32012
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[NASA-CASE-LAR-10551-1] c06 N74-12813
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[NASA-CASE-XNP-04969] c11 N69-27466
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[NASA-CASE-XNP-00389] c31 N70-34176
- Direct lift control system having flaps with slots adjacent to their leading edge and particularly adapted for lightweight aircraft  
[NASA-CASE-LAR-10249-1] c02 N71-26110
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[NASA-CASE-LAR-10574-1] c11 N73-13257
- High lift aircraft --- with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c05 N75-25914
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- Design of ring wing vehicle of high drag-to-weight ratio to withstand reentry stress into low density atmosphere  
[NASA-CASE-XLA-04901] c31 N71-24315
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[NASA-CASE-XNP-00389] c31 N70-34176
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[NASA-CASE-FRC-10063] c01 N71-12217
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[NASA-CASE-LAR-10348-1] c11 N73-12264
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[NASA-CASE-XGS-00260] c31 N70-37924
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[NASA-CASE-LAR-10739-1] c14 N73-16484
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[NASA-CASE-XGS-08269] c23 N71-26206
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[NASA-CASE-XLA-01090] c16 N71-28963
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[NASA-CASE-GSC-10062] c14 N71-15605
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[NASA-CASE-XMS-04300] c09 N71-19479
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[NASA-CASE-GSC-10216-1] c23 N71-26722
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[NASA-CASE-XLA-01090] c16 N71-28963
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[NASA-CASE-KSC-10565] c09 N72-25250
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[NASA-CASE-GSC-11782-1] c07 N74-22827
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[NASA-CASE-MSC-14683-1] c74 N75-33835
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[NASA-CASE-NPO-13756-1] c35 N76-14434
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[NASA-CASE-GSC-12088-1] c35 N76-17369
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[NASA-CASE-XNP-03930] c14 N69-24331
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[NASA-CASE-XLA-00141] c09 N70-33312
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[NASA-CASE-XNP-00438] c21 N70-35089
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[NASA-CASE-ERC-10248] c14 N72-17323
- Electro-optical stabilization of calibrated light source  
[NASA-CASE-MSC-12293-1] c14 N72-27411
- Development of temperature compensated light source with components and circuitry for maintaining luminous intensity independent of temperature variations  
[NASA-CASE-ARC-10467-1] c09 N73-14214
- Interferometer prism and control system for precisely determining direction to remote light source  
[NASA-CASE-ARC-10278-1] c14 N73-25463
- Attitude sensor  
[NASA-CASE-LAR-10586-1] c14 N74-15089
- Very high intensity light source using a cathode ray tube --- electron beams  
[NASA-CASE-XNP-01296] c33 N75-27250
- Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c33 N75-29318
- LIGHT TRANSMISSION**
- Hybrid holographic system using reference, transmitted, and reflected beams simultaneously  
[NASA-CASE-MPS-20074] c16 N71-15565

- Optical characteristics measuring apparatus  
[NASA-CASE-XNP-08840] c23 N71-16365
- Optical monitor panel consisting of translucent screen with test or meter information projected onto it from rear for application in control rooms of missile launching and tracking stations  
[NASA-CASE-IKS-03509] c14 N71-23175
- Solar cell panel with light transmitting cover plate  
[NASA-CASE-NPO-10747] c03 N72-22042
- Method and system for transmitting and distributing optical frequency radiation  
[NASA-CASE-HQN-10541-3] c23 N72-23695
- Thin absorbing metallic film for increased visible light transmission  
[NASA-CASE-LAR-10836-1] c26 N72-27784
- Transmitting and reflecting diffuser --- for ultraviolet light  
[NASA-CASE-LAR-10385-2] c23 N74-13436
- LIGHTING EQUIPMENT**
- Sealed fluorescent tube light unit capable of connection with other units to form string of work lights  
[NASA-CASE-IKS-05932] c09 N71-26787
- Pressurized inert gas feed for lighting system  
[NASA-CASE-KSC-10644] c09 N72-27227
- LIGHTNING**
- Apparatus for determining distance to lightning strokes from single station by magnetic and electric field sensing antennas  
[NASA-CASE-KSC-10698] c07 N73-20175
- System for locating lightning strokes by coordination of directional antenna signals  
[NASA-CASE-KSC-10729-1] c09 N73-32110
- Monitoring and recording lightning strokes in predetermined area  
[NASA-CASE-KSC-10728-1] c14 N73-32319
- Lightning current measuring systems  
[NASA-CASE-KSC-10807-1] c33 N75-26246
- LIMITER CIRCUITS**
- Variable duration pulse integrator design for integrating pulse duration modulated pulses with elimination of ripple content  
[NASA-CASE-XLA-01219] c10 N71-23084
- Circuits for amplitude limiting of random noise inputs  
[NASA-CASE-NPO-10169] c10 N71-24844
- Velocity limiting safety system for motor driven research vehicle  
[NASA-CASE-XLA-07473] c15 N71-24895
- Low level signal limiter  
[NASA-CASE-XLE-04791] c14 N74-22096
- LINEAR ACCELERATORS**
- Linear accelerator frequency control system  
[NASA-CASE-XGS-05441] c10 N71-22962
- LINEAR RECEIVERS**
- Antenna array at focal plane of reflector with coupling network for beam switching  
[NASA-CASE-GSC-10220-1] c07 N71-27233
- LINEAR SYSTEMS**
- Linear three-tap feedback shift register  
[NASA-CASE-NPO-10351] c08 N71-12503
- Family of m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c10 N73-20254
- Linear phase demodulator  
[NASA-CASE-GSC-12018-1] c17 N76-13169
- LINEARITY**
- Semilinear bearing comprising two rows of roller bearings separated by spherical bearings and permitting rotational and translational movement  
[NASA-CASE-XLA-02809] c15 N71-22982
- Mechanical actuator wherein linear motion changes to rotational motion  
[NASA-CASE-XGS-04548] c15 N71-24045
- LINKAGES**
- Development of collapsible nozzle extension for rocket engines  
[NASA-CASE-MPS-11497] c28 N71-16224
- Design and construction of mechanical probe for determining if object is properly secured  
[NASA-CASE-MPS-20760] c14 N72-33377
- LIQUEFACTION**
- Ophthalmic liquifaction pump  
[NASA-CASE-LEW-12051-1] c52 N75-33640
- LIQUID BEARINGS**
- Fatigue life of hybrid antifriction bearings at ultrahigh speeds  
[NASA-CASE-LEW-11152-1] c15 N73-32359
- LIQUID COOLING**
- Water cooled contactors for holding rotating carbon arc anode  
[NASA-CASE-IKS-03700] c15 N69-24266
- External device for liquid spray cooling of gas turbine blades  
[NASA-CASE-XLE-00037] c28 N70-33372
- Water cooled solenoid capable of producing magnetic field intensities up to 100 kilogauss  
[NASA-CASE-XNP-01951] c09 N70-41929
- Laminar flow of liquid coolants in rocket engines  
[NASA-CASE-NPO-10122] c12 N71-17631
- Space suit body heat exchanger design composed of thermal conductance yarn and liquid coolant loops  
[NASA-CASE-IKS-09571] c05 N71-19439
- Electric power system with circulatory liquid coolant cooling system  
[NASA-CASE-MPS-14114-2] c09 N71-24807
- Electric power system with thermionic diodes and circulatory liquid metal coolant lines  
[NASA-CASE-MPS-14114] c33 N71-27862
- Apparatus for liquid spray cooling of turbine blades  
[NASA-CASE-XLE-00027] c33 N71-29152
- Automatic control device for regulating inlet water temperature of liquid cooled spacesuit  
[NASA-CASE-MSC-13917-1] c05 N72-15098
- Automatic temperature control for liquid cooled space suit  
[NASA-CASE-ARC-10599-1] c05 N73-26071
- Heat exchanger system and method  
[NASA-CASE-LAR-10799-2] c34 N76-17317
- Liquid-cooled brassiere  
[NASA-CASE-ARC-11007-1] c52 N76-18782
- Closed loop spray cooling apparatus --- for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c37 N76-20486
- LIQUID CRYSTALS**
- Development of combined velocimeter and accelerometer based on color changes in liquid crystalline material subjected to shear stresses  
[NASA-CASE-ERC-10292] c14 N72-25410
- Input signal measurement using liquid crystalline elements  
[NASA-CASE-ERC-10275] c26 N72-25680
- Real time liquid crystal image converter  
[NASA-CASE-LAR-11206-1] c23 N74-30118
- LIQUID FILLED SHELLS**
- Liquid rocket systems for propulsion and control of spacecraft  
[NASA-CASE-XNP-00610] c28 N70-36910
- Design and development of fluid sample collector  
[NASA-CASE-IKS-06767-1] c14 N71-20435
- Manufacture of fluid containers from fused coated polyester sheets having resealable septum  
[NASA-CASE-NPO-10123] c15 N71-24835
- Omnidirectional liquid filled accelerometer design with liquid and housing temperature compensation  
[NASA-CASE-HQN-10780] c14 N71-30265
- LIQUID FLOW**
- Reduced gravity liquid configuration simulator to study propellant behavior in rocket fuel tanks  
[NASA-CASE-XLE-02624] c12 N69-39988
- Liquid junction for glass electrode or pH meters  
[NASA-CASE-NPO-10682] c15 N70-34699
- Actuator using compressed gas as driving force to control valve handling large liquid flows  
[NASA-CASE-XHQ-01208] c15 N70-35409
- Two component valve assembly for cryogenic liquid transfer regulation  
[NASA-CASE-XLE-00397] c15 N70-36492
- Positive displacement flowmeter for measuring extremely low flows of fluid with self calibrating features  
[NASA-CASE-XMP-02822] c14 N70-41994
- High pressure liquid flow sight assembly for wide temperature range applications including cryogenic fluids  
[NASA-CASE-XLE-02998] c14 N70-42074
- Carrier liquid system containing bodies of ablative material  
[NASA-CASE-LEW-10359-2] c33 N73-25952
- Zero gravity liquid transfer device, using spiral shaped screen  
[NASA-CASE-KSC-10626] c14 N73-27378

- System for measuring Reynolds stress in a  
turbulently flowing fluid --- signal processing  
[NASA-CASE-ARC-10755-2] c34 N75-16770
- LIQUID HELIUM**  
Heat operated cryogenic electrical generator  
[NASA-CASE-NPO-13303-1] c20 N75-24837  
Helium refrigerator  
[NASA-CASE-NPO-13435-1] c31 N76-14284
- LIQUID HYDROGEN**  
Development of thermal insulation material for  
insulating liquid hydrogen tanks in spacecraft  
[NASA-CASE-XMP-05046] c33 N71-28892  
Reinforced polyquinoxaline gasket and method of  
preparing the same --- resistant to ionizing  
radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364-1] c15 N74-18126
- LIQUID INJECTION**  
Thrust vector control by secondary injection of  
fluid into rocket nozzle flow field to  
separate exhaust flow  
[NASA-CASE-XLE-00208] c28 N70-34294  
System for aerodynamic control of rocket  
vehicles by secondary injection of fluid into  
nozzle exhaust stream  
[NASA-CASE-XLA-01163] c21 N71-15582  
Propellant injection assembly having  
individually removable and replaceable nozzles  
for liquid fueled rocket engines  
[NASA-CASE-XMP-00968] c28 N71-15660
- LIQUID LASERS**  
Method and apparatus using temperature control  
for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c16 N69-31343
- LIQUID LEVELS**  
Inductive liquid level detection system  
[NASA-CASE-XLE-01609] c14 N71-10500
- LIQUID METALS**  
Magnetohydrodynamic generator for mixing  
nonconductive gas and liquid metal mist to  
form slugs  
[NASA-CASE-XLE-02083] c03 N69-39983  
Thermoelectric power conversion by liquid metal  
flowing through magnetic field  
[NASA-CASE-XNP-00644] c03 N70-36803  
Analytical test apparatus and method for  
determining oxygen content in alkali liquid  
metal  
[NASA-CASE-XLE-01997] c06 N71-23527  
Electric power system with thermionic diodes and  
circulatory liquid metal coolant lines  
[NASA-CASE-MFS-14114] c33 N71-27862  
Flexible barrier membrane comprising porous  
substrate and incorporating liquid gallium or  
indium metal used as sealant barriers for  
spacecraft walls and pumping liquid propellants  
[NASA-CASE-XNP-08881] c17 N71-28747  
Shell-side liquid metal boiler employing tube  
and shell heat exchanger  
[NASA-CASE-NPO-10831] c33 N72-20915  
U shaped heated tube for distillation and  
purification of liquid metals  
[NASA-CASE-XNP-08124-2] c06 N73-13129  
Electromagnetic flow rate meter --- for liquid  
metals  
[NASA-CASE-LEW-10981-1] c14 N74-21018
- LIQUID NITROGEN**  
Transferring liquid nitrogen through vacuum  
chamber to cryopanel  
[NASA-CASE-LAR-10031] c15 N72-22484
- LIQUID OXYGEN**  
Dye penetrant and technique for nondestructive  
tests of solid surfaces contacted by liquid  
oxygen  
[NASA-CASE-XMP-02221] c18 N71-27170
- LIQUID PHASES**  
Method and feed system for separating and  
orienting liquid and vapor phases of liquid  
propellants in zero gravity environment  
[NASA-CASE-XLE-01182] c27 N71-15635  
Hydraulic apparatus for casting and molding of  
liquid polymers  
[NASA-CASE-XNP-07659] c06 N71-22975  
Mixed liquid and vapor phase analyzer design  
with thermocouples for relative heat transfer  
measurement  
[NASA-CASE-NPO-10691] c14 N71-26199  
Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c31 N75-32262
- LIQUID PROPELLANT ROCKET ENGINES**  
High thrust annular liquid propellant rocket  
engine and exhaust nozzle design  
[NASA-CASE-XLE-00078] c28 N70-33284  
Attitude and propellant flow control system for  
liquid propellant rocket vehicles  
[NASA-CASE-XMP-00185] c21 N70-34539  
Injector manifold assembly for bipropellant  
rocket engines providing for fuel propellant  
to serve as coolant  
[NASA-CASE-XMP-00148] c28 N70-38710  
Collapsible auxiliary tank for restarting liquid  
propellant rocket motors under zero gravity  
[NASA-CASE-XNP-01390] c28 N70-41275  
Rocket propellant injector with porous faceplate  
for rocket engine combustion chamber  
[NASA-CASE-LEW-11071-1] c27 N73-27695  
Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c28 N74-13502  
Space vehicle  
[NASA-CASE-MFS-22734-1] c18 N75-19329
- LIQUID ROCKET PROPELLANTS**  
Propellant injectors for rocket combustion  
chambers  
[NASA-CASE-XLE-00103] c28 N70-33241  
Liquid rocket systems for propulsion and control  
of spacecraft  
[NASA-CASE-XNP-00610] c28 N70-36910  
Igniter capsule for chemical ignition of liquid  
rocket propellants  
[NASA-CASE-XLE-00323] c28 N70-38505  
High temperature spark plug for igniting liquid  
rocket propellants  
[NASA-CASE-XLE-00660] c28 N70-39925  
Compact high pressure filter for rocket fuel lines  
[NASA-CASE-XNP-00732] c28 N70-41447  
Venting device for liquid propellant storage  
tank using magnetic field to separate liquid  
and gaseous phases  
[NASA-CASE-XLE-01449] c15 N70-41646  
Liquid propellant tank design with semitoroidal  
bulkhead  
[NASA-CASE-XMP-01899] c31 N70-41948  
Method and feed system for separating and  
orienting liquid and vapor phases of liquid  
propellants in zero gravity environment  
[NASA-CASE-XLE-01182] c27 N71-15635  
Control valve and coaxial variable injector for  
controlling bipropellant mixture ratio and flow  
[NASA-CASE-XNP-09702] c15 N71-17654  
Slosh and swirl alleviator for liquid propellant  
tanks during transport and flight  
[NASA-CASE-XLA-05749] c15 N71-19569  
Filler valve design for supplying liquid  
propellants at high pressure to space vehicles  
[NASA-CASE-XNP-01747] c15 N71-23024  
Electronic recording system for spatial mass  
distribution of liquid rocket propellant  
droplets or vapors ejected from high velocity  
nozzles  
[NASA-CASE-NPO-10185] c10 N71-26339  
Flexible barrier membrane comprising porous  
substrate and incorporating liquid gallium or  
indium metal used as sealant barriers for  
spacecraft walls and pumping liquid propellants  
[NASA-CASE-XNP-08881] c17 N71-28747  
Response analyzing apparatus for liquid vapor  
interface sensor of sloshing rocket propellant  
[NASA-CASE-MFS-11204] c14 N71-29134
- LIQUID SLOSHING**  
Slosh damping method for liquid rocket  
propellant tanks  
[NASA-CASE-XMP-00658] c12 N70-38997  
Flexible ring slosh damping baffle for  
spacecraft fuel tank  
[NASA-CASE-LAR-10317-1] c32 N71-16103  
Submerged fuel tank baffles to prevent sloshing  
in liquid propellant rocket flight  
[NASA-CASE-XLA-04605] c32 N71-16106  
Hot-wire liquid level detector for cryogenic  
propellants  
[NASA-CASE-XLE-00454] c23 N71-17802  
Slosh and swirl alleviator for liquid propellant  
tanks during transport and flight  
[NASA-CASE-XLA-05749] c15 N71-19569  
Pressure sensor network for measuring liquid  
dynamic response in flight including fuel tank  
acceleration, liquid slosh amplitude, and fuel  
depth monitoring

[NASA-CASE-XLA-05541] c12 N71-26387

**LIQUID-GAS MIXTURES**

Liquid-gas separator adapted for use in zero gravity environment - drawings [NASA-CASE-XMS-01624] c15 N70-40062

Absorbent apparatus for separating gas from liquid-gas stream used in environmental control under zero gravity conditions [NASA-CASE-XMS-01492] c05 N70-41297

Venting device for liquid propellant storage tank using magnetic field to separate liquid and gaseous phases [NASA-CASE-XLE-01449] c15 N70-41646

Liquid-gaseous centrifugal separator for weightlessness environment [NASA-CASE-XLA-00415] c15 N71-16079

Vapor-liquid separator design with vapor driven pump for separated liquid pumping for application in propellant transfer [NASA-CASE-XMP-04042] c15 N71-23023

**LIQUID-VAPOR INTERFACES**

Describing apparatus for separating gas from cryogenic liquid under zero gravity and for venting gas from fuel tank [NASA-CASE-XLE-00586] c15 N71-15968

Liquid-vapor interface seal design for turbine rotating shafts including helical and molecular pumps and liquid cooling of mercury vapor [NASA-CASE-XNP-02862-1] c15 N71-26294

Response analyzing apparatus for liquid vapor interface sensor of sloshing rocket propellant [NASA-CASE-MPS-11204] c14 N71-29134

**LIQUIDS**

Liquid-gas separator adapted for use in zero gravity environment - drawings [NASA-CASE-XMS-01624] c15 N70-40062

Electrical switching device comprising conductive liquid confined within square loop of deformable nonconductive tubing also used for leveling [NASA-CASE-NPO-10037] c09 N71-19610

Purification apparatus for vaporization and fractional distillation of liquids [NASA-CASE-XNP-08124] c15 N71-27184

Quantitative liquid measurements in container by resonant frequencies [NASA-CASE-XNP-02500] c18 N71-27397

Resonant infrasonic gauging device for measuring liquid quantity in closed bladderless reservoir [NASA-CASE-MSC-11847-1] c14 N72-11363

Ablative system with liquid carrying ablative material bodies and forming self-replacing ablative surface [NASA-CASE-LEW-10359] c33 N72-25911

Pressurized tank for feeding liquid waste into processing equipment [NASA-CASE-LAR-10365-1] c05 N72-27102

Apparatus for mixing two or more liquids under zero gravity conditions [NASA-CASE-LAR-10195-1] c15 N73-19458

Bi-metallic fluid displacement apparatus --- for stirring and heating stored gases and liquids [NASA-CASE-ARC-10441-1] c15 N74-15126

Method and device for detection of surface discontinuities or defects [NASA-CASE-MSC-14187-1] c14 N74-32879

Automatic liquid inventory collecting and dispensing unit [NASA-CASE-LAR-11071-1] c35 N75-19611

A 2 degree/90 degree laboratory scattering photometer [NASA-CASE-GSC-12088-1] c35 N76-17369

**LITHIUM COMPOUNDS**

Utilization of lithium p-lithiphenoxide to prepare star polymers [NASA-CASE-NPO-10998-1] c06 N73-32029

**LOAD DISTRIBUTION (FORCES)**

Force measuring instrument for structural members, particularly fastening bolts or studs [NASA-CASE-XMP-00456] c14 N70-34705

Multiple Belleville spring assembly with even load distribution [NASA-CASE-XNP-00840] c15 N70-38225

Device for use in loading tension members --- characterized by elongated elastic body [NASA-CASE-MPS-21488-1] c14 N75-24794

Pneumatic load compensating or controlling system [NASA-CASE-ARC-10907-1] c37 N75-32465

**LOAD TESTING MACHINES**

Load cell protection device using spring-loaded breakaway mechanism [NASA-CASE-XMS-06782] c32 N71-15974

Development of device for transferring load from load cell to bypass mechanism [NASA-CASE-XMS-06329-1] c15 N71-20441

Method and apparatus for tensile testing of metal foil [NASA-CASE-LAR-10208-1] c35 N76-18400

**LOAD TESTS**

Differential pressure cell insensitive to changes in ambient temperature and extreme overload [NASA-CASE-XAC-00042] c14 N70-34816

**LOADING OPERATIONS**

Air bearings for near frictionless transfer of loads from one body to another [NASA-CASE-XMP-01887] c15 N71-10617

An improved load handling device [NASA-CASE-MPS-23233-1] c54 N75-33725

Load regulating latch [NASA-CASE-MSC-19535-1] c37 N76-15463

**LOADS (FORCES)**

Device for handling heavy loads by distributing forces [NASA-CASE-XNP-04969] c11 N69-27466

Two plane balance for simultaneous measurements of multiple forces [NASA-CASE-XAC-00073] c14 N70-34813

Improving load capacity and fatigue life of rolling element systems in rockets and missiles [NASA-CASE-XLE-02999] c15 N71-16052

Development of device for transferring load from load cell to bypass mechanism [NASA-CASE-XMS-06329-1] c15 N71-20441

Valve assembly for controlling simultaneously more than one fluid flow, and having stable qualities under loads [NASA-CASE-XMS-05890] c09 N71-23191

Solid state force measuring electromechanical transducers made of piezoresistive materials [NASA-CASE-ERC-10088] c26 N71-25490

Turn on current transient limiter for controlling peak current flow in high capacity load [NASA-CASE-GSC-10413] c10 N71-26531

Synchronous dc direct-drive system comprising multiple-loop hybrid control system controlling load directly connected to actuator [NASA-CASE-GSC-10065-1] c10 N71-27136

Force balanced throttle valve for fuel control in rocket engines [NASA-CASE-NPO-10808] c15 N71-27432

Energy absorption device in high precision gear train for protection against damage to components caused by stop loads [NASA-CASE-XNP-01848] c15 N71-28959

Air bearing for use in exterior environment for moving heavy loads [NASA-CASE-WLP-10002] c15 N72-17451

Measuring device for bearing preload using spring washers [NASA-CASE-MPS-20434] c11 N72-25288

Variable direction force coupler for transmitting force along selectable curve path [NASA-CASE-MPS-20317] c15 N73-13463

Versatile ergometer with work load control [NASA-CASE-MPS-21109-1] c05 N73-27941

Three-axis adjustable loading structure [NASA-CASE-FRC-10051-1] c14 N74-13129

G-load measuring and indicator apparatus --- for aircraft [NASA-CASE-ARC-10806] c14 N74-27872

**LOCATES SYSTEM**

System for locating lightning strokes by coordination of directional antenna signals [NASA-CASE-KSC-10729-1] c09 N73-32110

Aircraft mounted crash activated transmitter device [NASA-CASE-MPS-16609-3] c09 N74-34647

Position determination systems --- using orbital antenna scan of celestial bodies [NASA-CASE-MSC-12593-1] c17 N76-21250

**LOCKING**

Releasable coupling device designed to receive and retain matching ends of electrical connectors [NASA-CASE-XMS-07846-1] c09 N69-21927



## LOCKS (FASTENERS)

Ball locking device which releases in response to small forces when subjected to high axial loads  
 [NASA-CASE-XMP-01371] c15 N70-41829  
 Low friction bearing and lock mechanism for two-axis gimbal carrying satellite payload  
 [NASA-CASE-GSC-10556-1] c31 N71-26537  
 Locking device for retaining turbine rotor blades on turbine wheel  
 [NASA-CASE-XMP-00816] c28 N71-28928  
 Longitudinal film gate and lock mechanism for securing film in motion picture cameras under vibration and high acceleration loads  
 [NASA-CASE-LAR-10686] c14 N71-28935  
 Design of quick release locking pin for joining two or more load-carrying structural members  
 [NASA-CASE-MPS-18495] c15 N72-11385

## LOCOMOTION

Jet shoes for space locomotion  
 [NASA-CASE-XLA-08491] c05 N69-21380  
 Attitude control training device for astronauts permitting friction-free movement with five degrees of freedom  
 [NASA-CASE-XMS-02977] c11 N71-10746  
 Restraint torso for increased mobility and reduced physiological effects while wearing pressurized suits  
 [NASA-CASE-MSC-12397-1] c05 N72-25119

## LOGARITHMS

Technique for deriving logarithm of input signal using exponentially varying electric signal inversely  
 [NASA-CASE-ERC-10267] c09 N72-23173

## LOGIC CIRCUITS

Selective gold diffusion on monolithic silicon chips for switching and nonswitching amplifier devices and circuits and linear and digital logic circuits  
 [NASA-CASE-ERC-10072] c09 N70-11148  
 Counter-divider circuit for accuracy and reliability in binary circuits  
 [NASA-CASE-XMP-00421] c09 N70-34502  
 Binary to binary-coded decimal converter using single set of logic circuits notwithstanding number of shift register decades  
 [NASA-CASE-XNP-00432] c08 N70-35423  
 Conversion system for increasing resolution of analog to digital converters  
 [NASA-CASE-XAC-00404] c08 N70-40125  
 Data processor having multiple sections activated at different times by selective power coupling to sections  
 [NASA-CASE-XGS-04767] c08 N71-12494  
 Binary sequence detector with few memory elements and minimized logic circuit complexity  
 [NASA-CASE-XNP-05415] c08 N71-12505  
 Bistable multivibrator circuits operating at high speed and low power dissipation  
 [NASA-CASE-XGS-00823] c10 N71-15910  
 Logic AND gate for fluid circuits  
 [NASA-CASE-XLA-07391] c12 N71-17579  
 Logic circuit to ripple add and subtract binary counters for spaceborne computers  
 [NASA-CASE-XGS-04766] c08 N71-18602  
 Constructing Exclusive-Or digital logic circuit in single module  
 [NASA-CASE-XLA-07732] c08 N71-18751  
 Stepping motor control apparatus exciting windings in proper time sequence to cause motor to rotate in either direction  
 [NASA-CASE-GSC-10366-1] c10 N71-18772  
 Serial digital decoder design with square circuit matrix and serial memory storage units  
 [NASA-CASE-NPO-10150] c08 N71-24650  
 Binary to decimal decoder logic circuit design with feedback control and display device  
 [NASA-CASE-XKS-06167] c08 N71-24890  
 Design and development of multistage current steering switch with inductively coupled magnetic cores  
 [NASA-CASE-XNP-08567] c09 N71-26000  
 Logic circuit for generating multibit binary code word in parallel  
 [NASA-CASE-XNP-04623] c10 N71-26103  
 Adaptive signal generating system and logic circuits for satellite television systems  
 [NASA-CASE-GSC-11367] c10 N71-26374

Transistorized switching logic circuits with tunnel diodes  
 [NASA-CASE-GSC-10878-1] c10 N72-22236

Logical function and circuit generator  
 [NASA-CASE-XLA-05099] c09 N73-13209

A synchronous binary array divider  
 [NASA-CASE-ERC-10180-1] c08 N74-20836  
 Computer interface system --- using asynchronous clocks  
 [NASA-CASE-NPO-13428-1] c08 N74-30549

Four phase logic systems --- including integrated microcircuits  
 [NASA-CASE-MSC-14240-1] c33 N75-14957

## LONGITUDINAL CONTROL

Three-axis controller operated by hand-wrist motion for yaw, pitch, and roll control  
 [NASA-CASE-XAC-01404] c05 N70-41581

## LOOP ANTENNAS

Collapsible, space erectable loop antenna system for space vehicle  
 [NASA-CASE-XMP-00437] c07 N70-40202  
 Automatic carrier acquisition system for phase locked loop receiver  
 [NASA-CASE-NPO-11628-1] c07 N73-30113

## LOOPS

Tape cartridge with high capacity storage of endless-loop magnetic tape  
 [NASA-CASE-XGS-00769] c14 N70-41647  
 Endless loop tape transport mechanism for driving and tensioning recording medium in magnetic tape recorder  
 [NASA-CASE-XGS-01223] c07 N71-10609  
 Filter for third order phase locked loops in signal receivers  
 [NASA-CASE-NPO-11941-1] c10 N73-27171  
 High speed shutter --- electrically actuated ribbon loop for shuttering optical or fluid passageways  
 [NASA-CASE-ARC-10516-1] c23 N74-21300  
 Means for accommodating large overstrain in lead wires --- by storing extra length of wire in stretchable loop  
 [NASA-CASE-LAR-10168-1] c09 N74-22865

## LOW ASPECT RATIO

Aerospace configuration with low and high aspect ratio variability for high and low speed flight  
 [NASA-CASE-XLA-00142] c02 N70-33286  
 Aerodynamic configuration for aircraft capable of high speed flight and low drag for low speed takeoff or landing upon presently existing airfields  
 [NASA-CASE-XLA-00806] c02 N70-34858

## LOW COST

Low cost efficient thermionic converter for use in nuclear reactors  
 [NASA-CASE-NPO-13121-1] c22 N73-12702  
 Lightweight reflector assembly and method  
 [NASA-CASE-NPO-13707-1] c74 N75-32894

## LOW DENSITY MATERIALS

Method and photodetector device for locating abnormal voids in low density materials  
 [NASA-CASE-MPS-20044] c14 N71-28993  
 Intumescent composition, foamed product prepared therewith and process for making same  
 [NASA-CASE-ARC-10304-2] c18 N74-27037  
 Process for preparing low density polybenzimidazole foams  
 [NASA-CASE-ARC-10823-1] c27 N75-24938  
 Mixing insert for foam dispensing apparatus  
 [NASA-CASE-MPS-20607-1] c37 N76-19436

## LOW FREQUENCIES

Determining sway of buildings by low frequency device using pendulum  
 [NASA-CASE-XMP-00479] c14 N70-34794

## LOW GRAVITY MANUFACTURING

A method and apparatus for continuously processing a single crystalline ribbon in a reduced gravity environment  
 [NASA-CASE-MPS-23002-1] c76 N76-13934  
 Method for manufacturing mirrors in zero gravity environment  
 [NASA-CASE-MSC-12611-1] c12 N76-15189

## LOW MOLECULAR WEIGHTS

Process for preparing high molecular weight polyaryloxysilanes from lower molecular weight forms  
 [NASA-CASE-XMP-08674] c06 N71-28807

## LOW NOISE

Low phase noise frequency divider for use with

- deep space network communication system  
[NASA-CASE-NPO-11569] c10 N73-26229
- LOW PRESSURE**  
Flowmeters for sensing low fluid flow rate and pressure for application to respiration rate studies  
[NASA-CASE-FRC-10022] c12 N71-26546
- LOW SPEED**  
Variable geometry manned orbital vehicle having high aerodynamic efficiency over wide speed range and incorporating auxiliary pivotal wings  
[NASA-CASE-XLA-03691] c31 N71-15674  
Device utilizing RC rate generators for continuous slow speed measurement  
[NASA-CASE-XMP-02966] c10 N71-24863
- LOW TEMPERATURE**  
Low to high temperature energy conversion system --- using ammonia  
[NASA-CASE-NPO-13510-1] c44 N75-16972
- LOW TEMPERATURE ENVIRONMENTS**  
Flexible, frangible electrochemical cell and package for operation in low temperature environment  
[NASA-CASE-XGS-10010] c03 N72-15986
- LOW TEMPERATURE TESTS**  
Cryostat for flexure fatigue testing of composite materials  
[NASA-CASE-XMP-02964] c14 N71-17659  
Cryostat for use with horizontal fatigue testing machines at low temperatures  
[NASA-CASE-XMP-10968] c14 N71-24234
- LOW VACUUM**  
Vibration damping system operating in low vacuum environment for spacecraft mechanisms  
[NASA-CASE-XMS-01620] c23 N71-15673
- LOW VOLTAGE**  
High speed low level voltage commutating switch  
[NASA-CASE-XAC-00060] c09 N70-39915  
Flexible monopole antenna with broad bandwidth and low voltage standing wave ratio  
[NASA-CASE-MSC-12101] c09 N71-18720  
Circuit design for failure sensing and protecting low voltage electric generator and power transmission networks  
[NASA-CASE-GSC-10114-1] c10 N71-27366
- LUBRICANTS**  
Metallic film diffusion into metal or ceramic surfaces for boundary lubrication in aerospace environments  
[NASA-CASE-XLE-01765] c18 N71-10772  
Metallic film diffusion for boundary lubrication in aerospace engineering  
[NASA-CASE-XLE-10337] c15 N71-24046  
Fluorinated esters of polycarboxylic acid and lubricating compositions for use at extreme temperature  
[NASA-CASE-MFS-21040-1] c06 N73-30098  
Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c15 N74-21058  
Journal bearings --- for lubricant films  
[NASA-CASE-LEW-11076-1] c15 N74-21061
- LUBRICATING OILS**  
Fluid seal formed by flexible disk on rotating shaft to retain lubricating oils around shaft  
[NASA-CASE-XLE-05130-2] c15 N71-19570
- LUBRICATION**  
Hollow high strength rolling elements for antifriction bearings fabricated from preformed components  
[NASA-CASE-LEW-11026-1] c15 N73-33383  
Variable resistance constant tension and lubrication device --- using oil-saturated leather wiper  
[NASA-CASE-KSC-10723-1] c37 N75-13265  
Fluid journal bearings  
[NASA-CASE-LEW-11076-4] c37 N76-15461
- LUBRICATION SYSTEMS**  
Development of hybrid bearing lubrication system with combination of standard type lubrication and magnetic flux field for earth atmosphere and space environment operation  
[NASA-CASE-XNP-01641] c15 N71-22997  
Lubrication for bearings by capillary action from oil reservoir of porous material  
[NASA-CASE-XNP-03972] c15 N71-23048  
Journal Bearings  
[NASA-CASE-LEW-11076-2] c15 N74-32921
- LUMINAIRES**  
Visual target luminaires for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c31 N69-27499  
Development of ultraviolet resonance lamp with improved transmission of radiation  
[NASA-CASE-ARC-10030] c09 N71-12521  
Lamp modulator for generating visual indication of presence and magnitude of signal  
[NASA-CASE-KSC-10565] c09 N72-25250  
Electrodeless lamp circuit driven by induction  
[NASA-CASE-MFS-21214-1] c09 N73-30181
- LUMINOSITY**  
Mechanism for measuring nanosecond time differences between luminous events using streak camera  
[NASA-CASE-XLA-01987] c23 N71-23976
- LUMINOUS INTENSITY**  
Filter arrangement for controlling light intensity in motion picture camera used in optical pyrometry  
[NASA-CASE-XLA-00062] c14 N70-33254  
Development of star intensity measuring system which minimizes effects of outside interference  
[NASA-CASE-XNP-06510] c14 N71-23797
- LUNAR BASES**  
Development and characteristics of natural circulation radiator for use with nuclear power plants installed in lunar space stations  
[NASA-CASE-XHQ-03673] c33 N71-29046
- LUNAR COMMUNICATION**  
Conversion system for transforming slow scan rate of Apollo TV camera on moon to fast scan of commercial TV  
[NASA-CASE-XMS-07168] c07 N71-11300  
Three transceiver lunar emergency system to relay voice communication of astronaut  
[NASA-CASE-MFS-21042] c07 N72-25171
- LUNAR COMPOSITION**  
Development and characteristics of pentrometer for measuring physical properties of lunar surface  
[NASA-CASE-XLA-00934] c14 N71-22765
- LUNAR EXPLORATION**  
Backpack carrier with retractable legs suitable for lunar exploration and convertible to rescue vehicle  
[NASA-CASE-LAR-10056] c05 N71-12351  
Development and characteristics of pentrometer for measuring physical properties of lunar surface  
[NASA-CASE-XLA-00934] c14 N71-22765  
Lightweight propulsion unit for movement of personnel and equipment across lunar surface  
[NASA-CASE-MFS-20130] c28 N71-27585  
Three transceiver lunar emergency system to relay voice communication of astronaut  
[NASA-CASE-MFS-21042] c07 N72-25171
- LUNAR GRAVITATION**  
Apparatus for training astronaut crews to perform on simulated lunar surface under conditions of lunar gravity  
[NASA-CASE-XMS-04798] c11 N71-21474
- LUNAR GRAVITY SIMULATOR**  
Lunar and planetary gravity simulator to test vehicular response to landing  
[NASA-CASE-XLA-00493] c11 N70-34786
- LUNAR LANDING**  
Lunar landing flight research vehicle  
[NASA-CASE-XFR-00929] c31 N70-34966
- LUNAR LOGISTICS**  
Lightweight propulsion unit for movement of personnel and equipment across lunar surface  
[NASA-CASE-MFS-20130] c28 N71-27585
- LUNAR ROCKS**  
Impact bit for cutting, collecting, and storing samples such as lunar rock cuttings  
[NASA-CASE-XNP-01412] c15 N70-42034
- LUNAR SOIL**  
Development of device for separating, collecting, and viewing soil particles  
[NASA-CASE-XNP-09770] c15 N71-20440  
Device which separates and screens particles of soil samples for vidicon viewing in vacuum and reduced gravity environments  
[NASA-CASE-XNP-09770-3] c11 N71-27036  
Portable penetrometer for analyzing soil characteristics  
[NASA-CASE-MFS-20774] c14 N73-19420

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# MAGNETIC CORES

Method for obtaining oxygen from lunar or similar soil  
[NASA-CASE-MSC-12408-1] c13 N74-13011

**LUNAR SURFACE VEHICLES**

Resilient vehicle wheel for lunar surface travel  
[NASA-CASE-MFS-20400] c31 N71-18611

Resilient wheel design with woven wire tire and abrasive treads for lunar surface vehicles  
[NASA-CASE-MFS-13929] c15 N71-27091

**LUNGS**

Piston device for producing known constant positive pressure within lungs by using thoracic muscles  
[NASA-CASE-XMS-01615] c05 N70-41329

## M

### MACHINE TOOLS

Rotary impact-type rock drill for recovering rock cuttings  
[NASA-CASE-XNP-07478] c14 N69-21923

Description of protective device for providing safe operating conditions around work piece in machine or metal working tool  
[NASA-CASE-XLE-01092] c15 N71-22797

Description of device for aligning stacked sheets of paper for repetitive cutting  
[NASA-CASE-XMS-04178] c15 N71-22798

Development and characteristics of frusto-conical die nib for extrusion of refractory metals  
[NASA-CASE-XLE-06773] c15 N71-23817

Design and development of layout tool for machine shop use to locate point in precise reference to straight or bowed reference edge  
[NASA-CASE-FRC-10005] c15 N71-26145

Optical gauging system for monitoring machine tool alignment  
[NASA-CASE-XAC-09489-1] c15 N71-26673

Caterpillar micropositioner for positioning machine tools adjacent to workpiece  
[NASA-CASE-GSC-10780-1] c14 N72-16283

Geneva mechanism --- including star wheel and driver  
[NASA-CASE-NPO-13281-1] c37 N75-13266

Precision alignment apparatus for cutting a workpiece  
[NASA-CASE-LAR-11658-1] c37 N76-13494

Zero torque gear head wrench  
[NASA-CASE-NPO-13059-1] c37 N76-20480

### MACHINERY

Design of mechanical device for stirring several test tubes simultaneously  
[NASA-CASE-XAC-06956] c15 N71-21177

Precipitation detector and mechanism for stopping and restarting machinery at initiation and cessation of rain  
[NASA-CASE-XLA-02619] c10 N71-26334

Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c15 N74-32917

### MACHINING

Laser machining device with dielectric functioning as beam waveguide for mechanical and medical applications  
[NASA-CASE-HQN-10541-2] c15 N71-27135

Lathe tool and holder combination for machining resin impregnated fiberglass cloth laminates  
[NASA-CASE-XLA-10470] c15 N72-21489

Drilled ball bearing with a one piece anti-tipping cage assembly  
[NASA-CASE-LEN-11925-1] c37 N75-31446

### MAGNESIUM

Chemical spot test for identifying magnesium or magnesium alloys used in aerospace applications  
[NASA-CASE-LAR-10953-1] c17 N73-27446

### MAGNESIUM ALLOYS

Procedure for bonding polytetrafluoroethylene thermal protective sleeves to magnesium alloy conical shell components with different thermal coefficients  
[NASA-CASE-XLA-01262] c15 N71-21404

Chemical spot test for identifying magnesium or magnesium alloys used in aerospace applications  
[NASA-CASE-LAR-10953-1] c17 N73-27446

### MAGNESIUM OXIDES

Method for determining presence and type of OH in MgO  
[NASA-CASE-NPO-10774] c06 N72-17095

### MAGNET COILS

Improved alternator with windings of superconducting materials acting as permanent magnet  
[NASA-CASE-XLE-02824] c03 N69-39890

Relay circuit breaker with magnetic latching to provide conductive and nonconductive paths for current devices  
[NASA-CASE-MSC-11277] c09 N71-29008

### MAGNETIC CHARGE DENSITY

Ion engine with magnetic circuit for optimal discharge  
[NASA-CASE-XLE-01124] c28 N71-14043

### MAGNETIC CIRCUITS

Ion engine with magnetic circuit for optimal discharge  
[NASA-CASE-XLE-01124] c28 N71-14043

### MAGNETIC COILS

Time division multiplexer with magnetic latching relays  
[NASA-CASE-XNP-00431] c09 N70-38998

Linear magnetic braking system with nonuniformly wrapped primary coil producing constant braking force on secondary coil  
[NASA-CASE-XLE-05079] c15 N71-17652

Electroexplosive safe-arm initiator using electric driven electromagnetic coils and magnets to align charge  
[NASA-CASE-LAR-10372] c09 N71-18599

### MAGNETIC CONTROL

Magnetically opened diaphragm design with camera shutter and expansion tube applications  
[NASA-CASE-XLA-03660] c15 N71-21060

Magnetically controlled plasma accelerator capable of ignition in low density gaseous environment  
[NASA-CASE-XLA-00327] c25 N71-29184

Magnetic bearing system  
[NASA-CASE-GSC-11978-1] c37 N75-27386

Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c37 N76-18459

### MAGNETIC CORES

Variable frequency magnetic coupled multivibrator with temperature compensated frequency control circuit  
[NASA-CASE-XGS-00458] c09 N70-38604

Variable frequency magnetic coupled multivibrator with output signal of constant amplitude and waveform  
[NASA-CASE-XGS-00131] c09 N70-38995

Electronic counter circuit utilizing magnetic core and low power consumption  
[NASA-CASE-XNP-08836] c09 N71-12515

Pulsed magnetic core memory element with blocking oscillator feedback for interrogation without loss of digital information  
[NASA-CASE-XGS-03303] c08 N71-18595

Describing magnetic core current switching device for steering bipolar current pulses to memory units  
[NASA-CASE-NPO-10201] c08 N71-18694

Reliable magnetic core circuit apparatus with application in selection matrices for digital memories  
[NASA-CASE-XNP-01318] c10 N71-23033

Magnetic current regulator for saturable core transformer  
[NASA-CASE-ERC-10075] c09 N71-24800

Power switch with transfluxor type magnetic core  
[NASA-CASE-NPO-10242] c09 N71-24803

Unsaturating magnetic core transformer design with warning signal for electrical power processing equipment  
[NASA-CASE-ERC-10125] c09 N71-24893

Temperature sensitive magnetometer with pulsating thermally cycled magnetic core  
[NASA-CASE-XAC-03740] c14 N71-26135

Digital magnetic core memory with sensing amplifier circuits  
[NASA-CASE-XNP-01012] c08 N71-28925

Saturable magnetic core and signal detection for indicating impending saturation  
[NASA-CASE-ERC-10089] c23 N72-17747

Commutator for steering precisely controlled bidirectional currents through numerous loads by use of magnetic core shift registers  
[NASA-CASE-NPO-10743] c08 N72-21199

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[NASA-CASE-NPO-11966-1] c09 N74-17928

# MAGNETIC DIPOLES

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## MAGNETIC DIPOLES

Torque meter for determining magnitude of torque generated by interaction of magnetic dipole between test specimen and ambient magnetic field  
[NASA-CASE-XGS-01013] c14 N71-23725

## MAGNETIC DISKS

Device for removing plastic dust cover from digital computer disk packs for inspection and cleaning  
[NASA-CASE-LAR-10590-1] c15 N70-26819

## MAGNETIC FIELDS

Magnetically diffused radial electric arc heater  
[NASA-CASE-XLA-00330] c33 N70-34540

Method and apparatus for communicating through ionized layer of gases surrounding spacecraft during reentry into planetary atmospheres  
[NASA-CASE-XLA-01127] c07 N70-41372

Venting device for liquid propellant storage tank using magnetic field to separate liquid and gaseous phases  
[NASA-CASE-XLE-01449] c15 N70-41646

Ion engine with magnetic circuit for optimal discharge  
[NASA-CASE-XLE-01124] c28 N71-14043

Development of wide range linear fluxgate magnetometer  
[NASA-CASE-XGS-01587] c14 N71-15962

Magnetic element position sensing device, using misaligned electromagnets  
[NASA-CASE-XGS-07514] c23 N71-16099

Development of non-magnetic indexing device for orienting magnetic flux sensing instrument in magnetic field without generation of detrimental magnetic fields  
[NASA-CASE-XGS-02422] c15 N71-21529

Negation of magnetic fields produced by thin waferlike circuit elements in space vehicles  
[NASA-CASE-XGS-03390] c03 N71-23187

Torque meter for determining magnitude of torque generated by interaction of magnetic dipole between test specimen and ambient magnetic field  
[NASA-CASE-XGS-01013] c14 N71-23725

Fluxgate magnetometer for measuring magnetic field along two axes using one sensor  
[NASA-CASE-GSC-10441-1] c14 N71-27325

Segmented superconducting magnet producing staggered magnetic field and suitable for broadband traveling wave masers  
[NASA-CASE-XGS-10518] c16 N71-28554

Magnetic method for detection of aircraft position relative to runway  
[NASA-CASE-ARC-10179-1] c21 N72-22619

Radial magnetic field for ion thruster  
[NASA-CASE-LEW-10770-1] c28 N72-22770

Automatic shunting of ion thruster magnetic field when thruster is not operating  
[NASA-CASE-LEW-10835-1] c28 N72-22771

Apparatus for determining distance to lightning strokes from single station by magnetic and electric field sensing antennas  
[NASA-CASE-KSC-10698] c07 N73-20175

Superconducting magnetic field trapping device for producing magnetic field in air  
[NASA-CASE-XNP-01185] c26 N73-28710

Electron beam controller --- using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c09 N74-10195

Magnetometer --- for determining magnetic remanence and magnetic fields  
[NASA-CASE-LAR-11617-1] c35 N75-33370

Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c35 N76-13456

Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c35 N76-16390

## MAGNETIC FLUX

Excitation and detection circuitry for flux responsive magnetic head  
[NASA-CASE-XNP-04183] c09 N69-24329

Cryogenic flux-gated magnetometer using superconductors  
[NASA-CASE-XAC-02407] c14 N69-27423

Flux gate magnetometer with toroidal gating coil and solenoidal output coil for signal modulation or amplification  
[NASA-CASE-XGS-01881] c09 N70-40123

Development of hybrid bearing lubrication system with combination of standard type lubrication and magnetic flux field for earth atmosphere and space environment operation  
[NASA-CASE-XNP-01641] c15 N71-22997

Magnetic current regulator for saturable core transformer  
[NASA-CASE-ERC-10075] c09 N71-24800

Magnetic flux pump for changing intensity of magnetic fields  
[NASA-CASE-XNP-01187] c15 N73-28516

Method for increasing intensity of magnetic field by transferring flux  
[NASA-CASE-XNP-01188] c15 N73-32361

Magnetic bearing --- for supplying magnetic fluxes  
[NASA-CASE-GSC-11079-1] c37 N75-18574

## MAGNETIC FORMING

Portable magnetomotive hammer for metal working  
[NASA-CASE-XMP-03793] c15 N71-24833

Method and apparatus for portable high precision magnetomotive bulging, constricting, and joining of large diameter metal tubes  
[NASA-CASE-XMP-05114-3] c15 N71-24865

## MAGNETIC INDUCTION

Continuous operation, single phased, induction plasma accelerator producing supersonic speeds  
[NASA-CASE-XLA-01354] c25 N70-36946

Automatic power supply circuit design for driving inductive loads and minimizing power consumption including solenoid example  
[NASA-CASE-NPO-10716] c09 N71-24892

Double-induction variable speed system for constant-frequency electrical power generation  
[NASA-CASE-ERC-10065] c09 N71-27364

Microwave generator using Gunn effect for magnetic tuning  
[NASA-CASE-NPO-12106] c09 N73-15235

High speed shutter --- electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c23 N74-21300

## MAGNETIC LENSES

Quadrupole mass spectrometer using noise spectrum for ion separation and identification  
[NASA-CASE-XNP-04231] c14 N73-32325

## MAGNETIC MATERIALS

Low density and low viscosity magnetic propellant for use under zero gravity conditions  
[NASA-CASE-XLE-01512] c12 N70-40124

## MAGNETIC MEASUREMENT

Cryogenic flux-gated magnetometer using superconductors  
[NASA-CASE-XAC-02407] c14 N69-27423

Development of wide range linear fluxgate magnetometer  
[NASA-CASE-XGS-01587] c14 N71-15962

Active RC filter networks and amplifiers for deep space magnetic field measurement  
[NASA-CASE-XAC-05462-2] c10 N72-17171

Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c35 N76-16390

## MAGNETIC POLES

Design of magnetohydrodynamic induction machine with end poles which produce compensating magnetic fields  
[NASA-CASE-XNP-07481] c25 N69-21929

Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c35 N76-13456

## MAGNETIC PUMPING

Magnetic flux pump for changing intensity of magnetic fields  
[NASA-CASE-XNP-01187] c15 N73-28516

Method for increasing intensity of magnetic field by transferring flux  
[NASA-CASE-XNP-01188] c15 N73-32361

Magnetocaloric pump --- for cryogenic fluids  
[NASA-CASE-LEW-11672-1] c15 N74-27904

## MAGNETIC RECORDING

Development of data storage system for storing digital data in high density format on magnetic tape  
[NASA-CASE-XNP-02778] c08 N71-22710

Magnetic recording head composed of ferrite core coated with thin film of aluminum-iron-silicon alloy  
[NASA-CASE-GSC-10097-1] c08 N71-27210

**MAGNETIC SIGNALS**

Plural recorder system which limits signal recording to signals of sufficient interest  
[NASA-CASE-XMS-06949] c09 N69-21467

**MAGNETIC STORAGE**

Nondestructive interrogating and state changing circuit for binary magnetic storage elements  
[NASA-CASE-XGS-00174] c08 N70-34743  
Magnetic matrix memory system for nondestructive reading of information contained in matrix  
[NASA-CASE-XMP-05835] c08 N71-12504  
Pulse duration control device for driving slow response time loads in selected sequence including switching and delay circuits and magnetic storage  
[NASA-CASE-XGS-04224] c10 N71-26418  
Redundant memory for enhanced reliability of digital data processing system  
[NASA-CASE-GSC-10564] c10 N71-29135  
Momentum wheel design for spacecraft attitude control and magnetic drum and head system for data storage  
[NASA-CASE-NPO-11481] c21 N73-13644

**MAGNETIC SUSPENSION**

Magnetic suspension and pointing system  
[NASA-CASE-LAR-11889-1] c19 N76-18227

**MAGNETIC SWITCHING**

Power switch with transfluxor type magnetic core  
[NASA-CASE-NPO-10242] c09 N71-24803  
Design and development of multistage current steering switch with inductively coupled magnetic cores  
[NASA-CASE-XNP-08567] c09 N71-26000

**MAGNETIC TAPE TRANSPORTS**

Reel safety brake  
[NASA-CASE-GSC-11960-1] c37 N76-13495

**MAGNETIC TAPES**

Tape cartridge with high capacity storage of endless-loop magnetic tape  
[NASA-CASE-XGS-00769] c14 N70-41647  
Endless loop tape transport mechanism for driving and tensioning recording medium in magnetic tape recorder  
[NASA-CASE-XGS-01223] c07 N71-10609  
Development of low friction magnetic recording tape  
[NASA-CASE-XGS-00373] c23 N71-15978  
System for recording and reproducing PCM data from data stored on magnetic tape  
[NASA-CASE-XGS-01021] c08 N71-21042  
Kinetic and static friction force measurement between magnetic tape and magnetic head surfaces  
[NASA-CASE-XNP-08680] c14 N71-22995  
Technique for recovery of voice data from heat damaged magnetic tape  
[NASA-CASE-MSC-14219-1] c07 N74-27612  
Magnetic tape head function switching system  
[NASA-CASE-GSC-11956-1] c35 N75-25134  
Automatic character skew and spacing checking network --- of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c33 N76-18353

**MAGNETIZATION**

Permanently magnetized ion engine casing construction for use in spacecraft propulsion systems  
[NASA-CASE-XNP-06942] c28 N71-23293

**MAGNETO-OPTICS**

Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c16 N74-13205

**MAGNETOHYDRODYNAMIC FLOW**

Improving performance of magnetoplasmadynamic arc rocket engine  
[NASA-CASE-LEW-11180-1] c25 N73-25760

**MAGNETOHYDRODYNAMIC GENERATORS**

Design of magnetohydrodynamic induction machine with end poles which produce compensating magnetic fields  
[NASA-CASE-XNP-07481] c25 N69-21929  
Magnetohydrodynamic generator for mixing nonconductive gas and liquid metal mist to form slugs  
[NASA-CASE-XLE-02083] c03 N69-39983  
Thermoelectric power conversion by liquid metal flowing through magnetic field  
[NASA-CASE-XNP-00644] c03 N70-36803  
Crossed field MHD plasma generator-accelerator  
[NASA-CASE-XLA-03374] c25 N71-15562

**MAGNETOMETERS**

Nonmagnetic thermal motor for magnetometer movement  
[NASA-CASE-YAR-03786] c09 N69-21313  
Cryogenic flux-gated magnetometer using superconductors  
[NASA-CASE-XAC-02407] c14 N69-27423  
Flux gate magnetometer with toroidal gating coil and solenoidal output coil for signal modulation or amplification  
[NASA-CASE-XGS-01881] c09 N70-40123  
Development of wide range linear fluxgate magnetometer  
[NASA-CASE-XGS-01587] c14 N71-15962  
Design and development of optically pumped resonance magnetometer for determining vectoral components in spatial coordinate system  
[NASA-CASE-XGS-04879] c14 N71-20428  
Temperature sensitive magnetometer with pulsating thermally cycled magnetic core  
[NASA-CASE-XAC-03740] c14 N71-26135  
Fluxgate magnetometer for measuring magnetic field along two axes using one sensor  
[NASA-CASE-GSC-10441-1] c14 N71-27325  
Hall effect magnetometer  
[NASA-CASE-LEW-11632-3] c14 N74-33944  
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[NASA-CASE-LEW-11632-2] c35 N75-13213  
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[NASA-CASE-LAR-11617-1] c35 N75-33370  
Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c35 N76-16390  
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[NASA-CASE-LAR-11387-1] c04 N76-20114

**MAGNETRONS**

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[NASA-CASE-XNP-09771] c09 N71-24841

**MAGNIFICATION**

Camera adapter design for image magnification including lens and illuminator  
[NASA-CASE-XMP-03844-1] c14 N71-26474  
Passive type, magnifying scratch gage, force transducer  
[NASA-CASE-LAR-10496-1] c14 N72-22437

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Torque meter for determining magnitude of torque generated by interaction of magnetic dipole between test specimen and ambient magnetic field  
[NASA-CASE-XGS-01013] c14 N71-23725

**MAINTENANCE**

Self testing and repairing computer comprising control and diagnostic unit and rollback points for error correction  
[NASA-CASE-NPO-10567] c08 N71-24633  
Development of process for bonding resinous body in cavities of honeycomb structures  
[NASA-CASE-MSC-12357] c15 N73-12489  
Method of repairing discontinuity in fiberglass structures  
[NASA-CASE-LAR-10416-1] c18 N74-30001

**MAJFUNCTIONS**

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[NASA-CASE-XLA-00100] c14 N70-36807

**MANDRELS**

Mandrel for shaping solid propellant rocket fuel into engine casing  
[NASA-CASE-XLA-00304] c27 N70-34783  
Rotating, multisided mandrel for fabricating gored inflatable spacecraft  
[NASA-CASE-XLA-04143] c15 N71-17687  
Method of making solid propellant rocket motor having reliable high altitude capabilities, long shelf life, and capable of firing with nozzle closure with foamed plastic permanent mandrel  
[NASA-CASE-XLA-04126] c28 N71-26779

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[NASA-CASE-XMP-00148] c28 N70-38710

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 [NASA-CASE-MPS-21611-1] c54 N75-12616  
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 [NASA-CASE-MSC-14245-1] c18 N75-27041  
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 [NASA-CASE-MPS-23088-1] c18 N75-29160  
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 [NASA-CASE-XLA-03127] c11 N71-10776  
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 [NASA-CASE-XLA-00678] c31 N70-34296  
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 [NASA-CASE-XLE-00953] c15 N71-15966  
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 [NASA-CASE-XLA-01401] c15 N71-21179  
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 [NASA-CASE-LAR-10626-1] c14 N74-21015  
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 GHz frequency range  
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 or reduced gravity environment  
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 [NASA-CASE-LAR-10083-1] c15 N71-27006  
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[NASA-CASE-ERC-10150] c14 N71-28992
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[NASA-CASE-XNP-04231] c14 N73-32325
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[NASA-CASE-LAR-11428-1] c14 N74-34857
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[NASA-CASE-XLE-00397] c15 N70-36492
- Catalyst bed element removing tool  
[NASA-CASE-XPR-00811] c15 N70-36901
- Air bearings for near frictionless transfer of  
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[NASA-CASE-XMF-01887] c15 N71-10617
- Quick-release coupling for fueling rocket  
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[NASA-CASE-XKS-01985] c15 N71-10782
- Method and apparatus for removing plastic  
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[NASA-CASE-MFS-10340] c15 N71-17628
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[NASA-CASE-NPO-11118] c03 N72-25021
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[NASA-CASE-LAR-10961-1] c15 N73-12496
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[NASA-CASE-MFS-20855] c15 N73-27405
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[NASA-CASE-MSC-12669-1] c44 N76-16621
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[NASA-CASE-XLA-08254] c14 N71-26161
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[NASA-CASE-NPO-10431] c15 N71-29132
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[NASA-CASE-XMS-09690] c33 N72-25913
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[NASA-CASE-MFS-20242] c14 N73-19421
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[NASA-CASE-MFS-20673] c14 N73-20476
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[NASA-CASE-XNP-05821] c03 N71-11056
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[NASA-CASE-XMF-05835] c08 N71-12504
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[NASA-CASE-NPO-10821] c03 N71-19545
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[NASA-CASE-XNP-01318] c10 N71-23033
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[NASA-CASE-XNP-01567] c15 N70-41310  
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[NASA-CASE-XMS-01618] c14 N71-20741  
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[NASA-CASE-XMP-02966] c10 N71-24863  
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[NASA-CASE-ERC-10088] c26 N71-25490  
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[NASA-CASE-MSC-11847-1] c14 N72-11363  
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[NASA-CASE-LAR-10855-1] c14 N73-13415  
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[NASA-CASE-MPS-20242] c14 N73-19421  
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[NASA-CASE-MPS-20673] c14 N73-20476  
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[NASA-CASE-NPO-10985] c14 N73-20478  
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[NASA-CASE-NPO-11749] c14 N73-28486  
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[NASA-CASE-LAR-10806-1] c14 N74-32877  
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[NASA-CASE-XMP-08523] c31 N71-20396  
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 [NASA-CASE-XLA-01401] c15 N71-21179  
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[NASA-CASE-XLA-05966] c15 N72-12408  
Metal plating process employing spraying of metallic power/peening particle mixture  
[NASA-CASE-GSC-11163-1] c15 N73-32360  
Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c15 N74-21063  
Scanning nozzle plating system --- for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c15 N74-23065

- Production of pure metals  
[NASA-CASE-LEW-10906-1] c06 N74-30502
- Thermocouple tape --- developed from  
thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c35 N76-15434
- Manufacture of glass-to-metal seals wherein the  
cleanliness of the process is enhanced and the  
leak resistance of the resulting seal is  
maximized  
[NASA-CASE-LAR-11563-1] c37 N76-21558
- METEORITE COLLISIONS**  
Method of and device for determining the  
characteristics and flux distribution of  
micrometeorites --- scanning puncture holes in  
sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c14 N74-13130
- METEORITES**  
Method for making pressurized meteoroid  
penetration detector panels  
[NASA-CASE-XLA-08916] c15 N71-29018
- METEORITIC DAMAGE**  
Capacitor sandwich structure containing metal  
sheets of known thickness for counting  
penetration rates of meteoroids  
[NASA-CASE-XLE-01246] c14 N71-10797
- METEOROID HAZARDS**  
Meteoroid impact position locator aid for manned  
space station  
[NASA-CASE-LAR-10629-1] c35 N75-33367
- METEOROID PROTECTION**  
Development and characteristics of protective  
coatings for spacecraft  
[NASA-CASE-XNP-02507] c31 N71-17679
- Development of composite structures for  
spacecraft to serve as anti-meteoroid device  
[NASA-CASE-LAR-10788-1] c31 N73-20880
- METEOROIDS**  
Cameras for photographing meteors in selected  
sky area  
[NASA-CASE-LAR-10226-1] c14 N73-19419
- Spaceflight meteoroid composition experiment ---  
characteristics of device for capturing  
meteoroid particles in space  
[NASA-CASE-MSC-12423-1] c14 N74-32885
- METEOROLOGICAL BALLOONS**  
Aerodynamically stable meteorological balloon  
using surface roughness effect  
[NASA-CASE-XMP-04163] c02 N71-23007
- METHANE**  
High temperature gas lubricant consisting of two  
fluoro-bromo-methanes  
[NASA-CASE-XLE-00353] c18 N70-39897
- MICHELSON INTERFEROMETERS**  
Michelson interferometer with photodetector for  
optical direction sensing  
[NASA-CASE-NPO-10320] c14 N71-17655
- Servo system for retroreflector of Michelson  
interferometer  
[NASA-CASE-NPO-10300] c14 N71-17662
- Computerized optical system for producing  
multiple images of a scene simultaneously  
[NASA-CASE-MSC-12404-1] c23 N73-13661
- Interferometer mirror tilt correcting system  
[NASA-CASE-NPO-13687-1] c35 N76-14433
- MICROBALANCES**  
Null-type vacuum microbalance for measuring  
minute mechanical displacements  
[NASA-CASE-XAC-00472] c15 N70-40180
- MICROBIOLOGY**  
Development of variable angle device for  
positioning test tubes to permit optimum  
drying of culture medium  
[NASA-CASE-LAR-10507-1] c11 N72-25284
- Apparatus for microbiological sampling ---  
including automatic swabbing  
[NASA-CASE-LAR-11069-1] c35 N75-12272
- Automatic inoculating apparatus --- includes  
movable carriage, drive motor, and swabbing  
motor  
[NASA-CASE-LAR-11074-1] c51 N75-13502
- Automatic microbial transfer device  
[NASA-CASE-LAR-11354-1] c35 N75-27330
- MICROELECTRONICS**  
Separation of semiconductor wafer into chips  
bounded by scribe lines  
[NASA-CASE-ERC-10138] c26 N71-14354
- Vibrophonocardiograph comprising low weight and  
small volume piezoelectric microphone with  
amplifier having high input impedance for high  
sensitivity and low frequency response  
[NASA-CASE-XPR-07172] c05 N71-27234
- Electrical connections for thin film hybrid  
microcircuits  
[NASA-CASE-YMS-02182] c10 N71-28783
- Method for coating through-holes in ceramic  
substrates used in fabricating miniaturized  
electronic circuits  
[NASA-CASE-XNP-05999] c15 N71-29032
- Precision surface cutter for screen circuit  
negatives and other microcircuits  
[NASA-CASE-XLA-09843] c15 N72-27485
- Material compositions and processes for  
developing dielectric thick films used in  
microcircuit capacitors  
[NASA-CASE-LAR-10294-1] c26 N72-28762
- Active tuned circuits for microelectronic  
construction  
[NASA-CASE-GSC-11340-1] c10 N72-33230
- MICROFILMS**  
Apparatus for semiautomatic inspection of  
microfilmed documents for density, resolution,  
size, and position  
[NASA-CASE-MPS-20240] c14 N71-26788
- MICROMETEORITES**  
Method of and device for determining the  
characteristics and flux distribution of  
micrometeorites --- scanning puncture holes in  
sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c14 N74-13130
- Micrometeoroid velocity and trajectory analyzer  
[NASA-CASE-GSC-11892-1] c35 N76-15433
- MICROMETEOROIDS**  
Particle detector for measuring micrometeoroid  
velocity in space  
[NASA-CASE-XLA-00495] c14 N70-41332
- Piezoelectric transducer for detecting and  
measuring micrometeoroids  
[NASA-CASE-XAC-01101] c14 N70-41957
- Pressurized cell micrometeoroid detector  
[NASA-CASE-XLA-00936] c14 N71-14996
- Development of large area micrometeoroid impact  
detector panels  
[NASA-CASE-XLA-05906] c31 N71-16221
- Rotary bead dropper and selector for testing  
micrometeorite transducers  
[NASA-CASE-XGS-03304] c09 N71-22988
- Measuring micrometeoroid depth of penetration  
into various materials  
[NASA-CASE-XLA-00941] c14 N71-23240
- Structure of fabric layers for micrometeoroid  
protection garment with capability for  
eliminating heat shorts for use in  
manufacturing space suits  
[NASA-CASE-MSC-12109] c18 N71-26285
- Micrometeoroid analyzer using arrays of  
interconnected capacitors and ion detector  
[NASA-CASE-ARC-10443-1] c14 N73-20477
- Cold cathode discharge tube with pressurized gas  
cell for meteoroid detection in space  
[NASA-CASE-LAR-10483-1] c14 N73-32327
- Deployable pressurized cell structure for a  
micrometeoroid detector  
[NASA-CASE-LAR-10295-1] c15 N74-21062
- Spaceflight meteoroid composition experiment ---  
characteristics of device for capturing  
meteoroid particles in space  
[NASA-CASE-MSC-12423-1] c14 N74-32885
- Semiconductor projectile impact detector  
[NASA-CASE-MFS-23008-1] c35 N76-19405
- MICROMINIATURIZATION**  
Miniaturized radiometer for detecting low level  
thermal radiation  
[NASA-CASE-XLA-04556] c14 N69-27484
- MICROORGANISMS**  
Development of bacteriostatic conformal coating  
and methods of application  
[NASA-CASE-GSC-10007] c18 N71-16046
- Portable vacuum probe surface sampler for  
sampling large surface areas with relatively  
light loading densities of microorganisms  
[NASA-CASE-LAR-10623-1] c14 N73-30395
- Measurement of gas production of microorganisms  
--- using pressure sensors  
[NASA-CASE-LAR-11326-1] c35 N75-33368
- MICROPARTICLES**  
Micropacked column for rapid chromatographic  
analysis using low gas flow rates  
[NASA-CASE-XNP-04816] c06 N69-39936

## MICROPHONES

Audio signal processing system for noise surge elimination at low amplitude audio input  
[NASA-CASE-HSC-12223-1] c07 N71-26181  
Vibrophonocardiograph comprising low weight and small volume piezoelectric microphone with amplifier having high input impedance for high sensitivity and low frequency response  
[NASA-CASE-XPR-07172] c05 N71-27234  
Development of wind tunnel microphone structure to minimize effects of vibrations and eliminate unwanted signals in microphone output  
[NASA-CASE-XNP-00250] c11 N71-28779  
Adjustable frequency response microphone  
[NASA-CASE-LAR-11170-1] c07 N74-12843

## MICROSCOPES

Absolute focus locking device for microscopes to maintain set focus for extended time period  
[NASA-CASE-LAR-10184] c14 N72-22445  
Hand-held, lightweight, portable photomicroscope  
[NASA-CASE-ARC-10468-1] c14 N73-33361

## MICROSTRUCTURE

Production of high strength refractory compounds and microconstituents into refractory metal matrix  
[NASA-CASE-XLE-03940] c18 N71-26153  
Development of procedure for improved distribution of refractory compounds and micro-constituents in refractory metal matrix  
[NASA-CASE-XLE-03940-2] c17 N72-28536  
Diffusion welding --- heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c15 N74-21055  
Method of determining bond quality of power transistors attached to substrates --- X ray inspection of junction microstructure  
[NASA-CASE-MPS-21931-1] c37 N75-26372

## MICROTHRUST

Electrostatic microthrust propulsion system with annular slit colloid thruster  
[NASA-CASE-GSC-10709-1] c28 N71-25213  
Heated porous plug microthruster for spacecraft reaction jet controlled systems such as fuel flow regulation, propellant disassociation, and heat transfer augmentation  
[NASA-CASE-GSC-10640-1] c28 N72-18766

## MICROWAVE AMPLIFIERS

Thermally sensitive tuning probe for nullifying detuning effects in microwave cavity resonator of amplifier  
[NASA-CASE-XNP-00449] c14 N70-35220

## MICROWAVE ANTENNAS

Microwave power receiving antenna solving heat dissipation problems by construction of elements as heat pipe devices  
[NASA-CASE-MPS-20333] c09 N71-13486  
Development and characteristics of low-noise multimode monopulse antenna feed system for use with microwave communication equipment  
[NASA-CASE-XNP-01735] c07 N71-22750  
Microwave omnidirectional antenna for use on spacecraft  
[NASA-CASE-XLA-03114] c09 N71-22888  
Portable equipment for validating C band launch pad antennas and transmission lines used for spacecraft checkout  
[NASA-CASE-XKS-10543] c07 N71-26292  
Multipurpose microwave antenna, employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c07 N72-25174  
Omnidirectional antenna array with circumferential slots for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c09 N72-25247  
Characteristics of microwave antenna with conical reflectors to generate plane wave front  
[NASA-CASE-NPO-11661] c07 N73-14130

## MICROWAVE CIRCUITS

Quasi-optical microwave circuit with dielectric body for use with oversize waveguides  
[NASA-CASE-ERC-10011] c07 N71-29065

## MICROWAVE COUPLING

Microwave waveguide switch with rotor position control  
[NASA-CASE-XNP-06507] c09 N71-23548

## MICROWAVE EQUIPMENT

Apparatus for generating microwave signals at progressively related phase angles for driving

antenna array  
[NASA-CASE-ERC-10046] c10 N71-18722  
Broadband microwave waveguide window to compensate dielectric material filling  
[NASA-CASE-XNP-08880] c09 N71-24808  
Dual frequency feed systems for Cassegrainian antennas  
[NASA-CASE-NPO-13091-1] c09 N73-12214  
Resonant waveguide stark cell --- using microwave spectrometers  
[NASA-CASE-LAR-11352-1] c33 N75-26245  
Refrigerated coaxial coupling --- for microwave equipment  
[NASA-CASE-NPO-13504-1] c33 N75-30430  
**MICROWAVE FILTERS**  
Microwave power divider for providing variable output power to output waveguide in fixed waveguide system  
[NASA-CASE-NPO-11031] c07 N71-33606  
Selective bandpass resonators using bandstop resonator pairs for microwave frequency operation  
[NASA-CASE-GSC-10990-1] c09 N73-26195  
**MICROWAVE FREQUENCIES**  
Varactor microwave frequency mixing circuit  
[NASA-CASE-XGS-02171] c09 N69-24324  
Voltage tunable Gunn effect semiconductor for microwave generation  
[NASA-CASE-XER-07894] c09 N71-18721  
Multimode antenna feed system for microwave and broadband communication  
[NASA-CASE-GSC-11046-1] c07 N73-28013  
**MICROWAVE OSCILLATORS**  
Microwave generator using Gunn effect for magnetic tuning  
[NASA-CASE-NPO-12106] c09 N73-15235  
Electron beam controller --- using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c09 N74-10195  
**MICROWAVE RADIONETERS**  
Input radio frequency circuit for switching type absolute temperature measuring radiometer for noise sources  
[NASA-CASE-ERC-11020] c14 N71-26774  
**MICROWAVE REFLECTOMETERS**  
Reflectometer for receiver input impedance match measurement  
[NASA-CASE-XNP-10843] c07 N71-11267  
Surface defect detection by reflected microwave radiation pattern  
[NASA-CASE-ARC-10009-1] c15 N71-17822  
**MICROWAVE RESONANCE**  
Microwave double resonance spectroscopy absorption cell for gas analysis  
[NASA-CASE-LAR-10305] c14 N71-26137  
**MICROWAVE SWITCHING**  
Design of gyrator circuit using operational amplifiers to replace ungrounded inductors  
[NASA-CASE-XAC-10608-1] c09 N71-12517  
**MICROWAVE TUBES**  
Electrostatic charged particle collector containing stacked electrodes for microwave tube  
[NASA-CASE-LEW-11192-1] c09 N73-13208  
**MICROWAVES**  
Radio frequency noise generator having microwave slow-wave structure in gas discharge plasma  
[NASA-CASE-XER-11019] c09 N71-23598  
Method and apparatus for optically modulating light or microwave beam  
[NASA-CASE-GSC-10216-1] c23 N71-26722  
Microwave waveguide mixer  
[NASA-CASE-ERC-10179] c07 N72-20141  
Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MPS-21470-1] c10 N74-19870  
**MIDAIR COLLISIONS**  
Economical satellite aided vehicle avoidance system for preventing midair collisions  
[NASA-CASE-ERC-10419] c21 N72-21631  
Development and characteristics of electronic signalling system and data processing equipment for warning systems to avoid midair collisions between aircraft  
[NASA-CASE-LAR-10717-1] c21 N73-30641  
**MILLIMETER WAVES**  
Millimeter wave antenna system for spacecraft use  
[NASA-CASE-GSC-10949-1] c07 N71-28965

- Millimeter wave pumped parametric amplifier  
[NASA-CASE-GSC-11617-1] c09 N74-32660
- MILLING (MACHINING)**  
Rotary spindle lathe attachments for machining geometrical cones  
[NASA-CASE-XMS-04292] c15 N71-22722
- MILLING MACHINES**  
Electro-optical system for maintaining two-axis alignment during milling operations on large tank-sections  
[NASA-CASE-XMP-00908] c14 N70-40238  
Description of portable milling tool for milling tube or pipe ends to desired shape and thickness  
[NASA-CASE-XMP-03511] c15 N71-22799  
Grinding arrangement for ball nose milling cutters  
[NASA-CASE-LAR-10450-1] c15 N74-27905
- MINIATURE ELECTRONIC EQUIPMENT**  
Miniature solid state, direction sensitive, stress transducer design with bonded semiconductive piezoresistive element for sensing residual stresses  
[NASA-CASE-XNP-02983] c14 N71-21091  
Transducer circuit design with single coaxial cable for input and output connections including incorporation into miniaturized catheter transducer  
[NASA-CASE-ARC-10132-1] c09 N71-24597  
Solid state television camera system consisting of monolithic semiconductor mosaic sensor and molecular digital readout systems  
[NASA-CASE-XMP-06092] c07 N71-24612  
Ingestible miniaturized telemetry device for deep body temperature measurements on humans and animals  
[NASA-CASE-ARC-10583-1] c05 N73-14093
- MINIATURIZATION**  
Miniature vibration isolator utilizing elastic tubing material  
[NASA-CASE-XLA-01019] c15 N70-40156  
Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits  
[NASA-CASE-XNP-01753] c08 N71-22897  
Fast response miniature carbon dioxide detector with no moving parts for measuring concentration in any atmosphere  
[NASA-CASE-MSC-13332-1] c14 N72-21408
- MIRRORS**  
Pneumatic control of telescopic mirror support system  
[NASA-CASE-XLA-03271] c11 N69-24321  
Oscillatory electromagnetic mirror drive system for horizon scanners  
[NASA-CASE-XLA-03724] c14 N69-27461  
Servo system for retroreflector of Michelson interferometer  
[NASA-CASE-NPO-10300] c14 N71-17662  
Gas laser frequency stabilized by position of mirrors in resonant cavity  
[NASA-CASE-XGS-03644] c16 N71-18614  
Highly stable optical mirror assembly optimizing image quality of light diffraction patterns  
[NASA-CASE-ERC-10001] c23 N71-24868  
Adjustable rigid mount for trihedral mirror formed of alloy with small coefficient of thermal expansion supporting screws and spring-biased plates  
[NASA-CASE-XNP-08907] c23 N71-29123  
Optical range finder using reflective first surfaces mirror and transmitting beam splitter  
[NASA-CASE-MSC-12105-1] c14 N72-21409  
Optical mirror support system  
[NASA-CASE-XER-07896-2] c23 N72-22673  
Strain gauge ambiguity sensor for segmented mirror active optical system  
[NASA-CASE-MPS-20506-1] c35 N75-12273  
Interferometer mirror tilt correcting system  
[NASA-CASE-NPO-13687-1] c35 N76-14433  
Method for manufacturing mirrors in zero gravity environment  
[NASA-CASE-MSC-12611-1] c12 N76-15189
- MISSILE CONTROL**  
Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c09 N74-20864
- MISSILE LAUNCHERS**  
Launch pad missile release system with bending moment change rate reduction in thrust distribution structure at liftoff  
[NASA-CASE-XMP-03198] c30 N70-40353  
Optical monitor panel consisting of translucent screen with test or meter information projected onto it from rear for application in control rooms of missile launching and tracking stations  
[NASA-CASE-XKS-03509] c14 N71-23175  
Controlled release device for use in launching rockets or missiles  
[NASA-CASE-XKS-03338] c15 N71-24043
- MIXING CIRCUITS**  
Varactor microwave frequency mixing circuit  
[NASA-CASE-XGS-02171] c09 N69-24324  
Microwave waveguide mixer  
[NASA-CASE-ERC-10179] c07 N72-20141
- MOBILITY**  
Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c33 N75-27251
- MODE TRANSFORMERS**  
Silicon controlled rectifier inverter with compensation of transients to avoid false gating  
[NASA-CASE-XLA-08507] c09 N69-39984  
Dual waveguide mode source for controlling amplitudes of two modes  
[NASA-CASE-XNP-03134] c07 N71-10676
- MODULATION**  
Demodulator for carrier transducers  
[NASA-CASE-NUC-10107-1] c09 N74-17930
- MODULATORS**  
Fabry-Perot interferometer retrodirective reflector modulator for optical communication  
[NASA-CASE-XGS-04480] c16 N69-27491  
Optical retrodirective modulator with focus spoiling reflector driven by modulation signal  
[NASA-CASE-GSC-10062] c14 N71-15605  
Calibrator for measuring and modulating or demodulating laser outputs  
[NASA-CASE-XLA-03410] c16 N71-25914  
Full wave modulator-demodulator amplifier apparatus --- for generating rectified output signal  
[NASA-CASE-PRC-10072-1] c09 N74-14939
- MODULES**  
Biorthogonal encoder with modular design  
[NASA-CASE-NPO-10629] c08 N72-18184
- MOISTURE**  
Gas purged dry box glove reducing permeation of air or moisture into dry box or isolator by diffusion through glove  
[NASA-CASE-XLE-02531] c05 N71-23080
- MOISTURE METERS**  
Method of evaluating moisture barrier properties of materials used in electronics encapsulation  
[NASA-CASE-NPO-10051] c18 N71-24934
- MOLDING MATERIALS**  
Vacuum method for molding thermosetting compounds used as ablative materials  
[NASA-CASE-XLA-01091] c15 N71-10672  
Method of making molded electric connector for use with flat conductor cables  
[NASA-CASE-XNP-03498] c15 N71-15986  
Hydraulic apparatus for casting and molding of liquid polymers  
[NASA-CASE-XNP-07659] c06 N71-22975  
Cold metal hydroforming techniques using epoxy molds for counteracting creep or stretch  
[NASA-CASE-XLE-05641-1] c15 N71-26346  
Molding process for imidazopyrrolone polymers  
[NASA-CASE-LAR-10547-1] c15 N74-13177  
Evacuated displacement compression molding  
[NASA-CASE-LAR-10782-1] c15 N74-14133
- MOLDS**  
Forming mold for polishing and machining curved solar magnesium reflector with reinforcing ribs  
[NASA-CASE-XLE-08917-2] c15 N71-24836  
Using molds for fabricating individual fluid circuit components  
[NASA-CASE-XLA-07829] c15 N72-16329  
Evacuated displacement compression molding  
[NASA-CASE-LAR-10782-1] c15 N74-14133  
Method of making an apertured casting  
[NASA-CASE-LEW-11169-1] c15 N74-18131  
Molding apparatus --- for thermosetting plastic compositions  
[NASA-CASE-LAR-10489-2] c15 N74-32920  
Evacuated, displacement compression mold --- of tubular bodies from thermosetting plastics

- [NASA-CASE-LAR-10782-2] c31 N75-13111
- MOLECULAR BEAMS**
- Selector mechanism for mechanical separation and discrimination of high velocity molecular particles [NASA-CASE-XLE-01533] c11 N71-10777
- Sputtering holes with ion beamlets [NASA-CASE-LEW-11646-1] c28 N74-31269
- MOLECULAR GASES**
- Compact hydrogenator [NASA-CASE-NPO-11682-1] c15 N74-15127
- MOLECULAR PUMPS**
- Omnidirectional anisotropic molecular trap, used with vacuum pump to simulate space environments for testing spacecraft components [NASA-CASE-XGS-00783] c30 N71-17788
- Liquid-vapor interface seal design for turbine rotating shafts including helical and molecular pumps and liquid cooling of mercury vapor [NASA-CASE-XNP-02862-1] c15 N71-26294
- MOLECULAR ROTATION**
- Diatomic infrared gasdynamic laser --- for producing different wavelengths [NASA-CASE-ARC-10370-1] c36 N75-31426
- MOLECULAR SPECTROSCOPY**
- Microwave double resonance spectroscopy absorption cell for gas analysis [NASA-CASE-LAR-10305] c14 N71-26137
- MOLTEN SALT ELECTROLYTES**
- Operation method for combined electrolysis device and fuel cell using molten salt to produce power by thermoelectric regeneration mechanism [NASA-CASE-XLE-01645] c03 N71-20904
- Zinc-halide battery with molten electrolyte [NASA-CASE-NPO-11961-1] c44 N76-18643
- MOLYBDENUM CARBIDES**
- Plasma or plasma spraying for molybdenum coating of carbon or graphite surfaces to prevent oxidative corrosion [NASA-CASE-XLA-00302] c15 N71-16077
- MOLYBDENUM COMPOUNDS**
- Method for producing refractory molybdenum disilicides [NASA-CASE-XMS-00370] c17 N71-20941
- MOMENTS OF INERTIA**
- Test fixture for measuring moment of inertia of irregularly shaped body with multiple axes [NASA-CASE-XGS-01023] c14 N71-22992
- MOMENTUM**
- Utilization of momentum devices for forming attitude control and damping system for spacecraft [NASA-CASE-XLA-02551] c21 N71-21708
- Momentum-velocity analyzer for measuring minute space particles [NASA-CASE-XMS-04201] c14 N71-22990
- MONITORS**
- Fluid leakage detection system with automatic monitoring capability [NASA-CASE-LAR-10323-1] c12 N71-17573
- Monitoring circuit design for sampling circuit control and reduction of time-bandwidth in video communication systems [NASA-CASE-XNP-02791] c07 N71-23026
- Optical monitor panel consisting of translucent screen with test or meter information projected onto it from rear for application in control rooms of missile launching and tracking stations [NASA-CASE-XKS-03509] c14 N71-23175
- Peak polarity selector for monitoring waveforms [NASA-CASE-PRC-10010] c10 N71-24862
- Circuit for monitoring power supply by ripple current indication [NASA-CASE-KSC-10162] c09 N72-11225
- Development of droplet monitoring probe for use in analysis of droplet propagation in mixed-phase fluid stream [NASA-CASE-NPO-10985] c14 N73-20478
- Monitoring and recording lightning strokes in predetermined area [NASA-CASE-KSC-10728-1] c14 N73-32319
- Method and apparatus for optically monitoring the angular position of a rotating mirror [NASA-CASE-GSC-11353-1] c23 N74-21304
- MONOCHROMATIC RADIATION**
- Method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma [NASA-CASE-XNP-04167-3] c25 N72-21693
- Apparatus for producing monochromatic light from continuous plasma source [NASA-CASE-XNP-04167-2] c25 N72-24753
- MONOCHROMATORS**
- Analytical photoionization mass spectrometer with argon gas filter between light source and monochromator [NASA-CASE-LAR-10180-1] c06 N71-13461
- Color television system for allowing monochrome television camera to produce color pictures [NASA-CASE-MSC-12146-1] c07 N72-17109
- MONOMERS**
- Fabrication of polyphenylquinoxaline composite articles by means of in situ polymerization of monomers [NASA-CASE-LEW-11879-1] c18 N74-20152
- MONOPOLE ANTENNAS**
- Monopole antenna system for maximum omnidirectional efficiency for use on satellites [NASA-CASE-XLA-00414] c07 N70-38200
- Flexible monopole antenna with broad bandwidth and low voltage standing wave ratio [NASA-CASE-MSC-12101] c09 N71-18720
- MONOPROPELLANTS**
- Ignition system for monopropellant combustion devices [NASA-CASE-XNP-00249] c28 N70-38249
- Catalyst bed ignition system for hydrazine propellants [NASA-CASE-XNP-00876] c28 N70-41311
- MONOPULSE ANTENNAS**
- Electronic and mechanical scanning control system for monopulse tracking antenna [NASA-CASE-XGS-05582] c07 N69-27460
- Development and characteristics of low-noise multimode monopulse antenna feed system for use with microwave communication equipment [NASA-CASE-XNP-01735] c07 N71-22750
- Monopulse scanning network for scanning volumetric antenna pattern [NASA-CASE-GSC-10299-1] c09 N71-24804
- Switchable beamwidth monopulse method and system [NASA-CASE-GSC-11924-1] c33 N75-26252
- MONOPULSE RADAR**
- Polarization diversity monopulse tracking receiver design without radio frequency switches [NASA-CASE-XGS-03501] c09 N71-20864
- Monopulse tracking system with antenna array of three radiators for deriving azimuth and elevation indications [NASA-CASE-XGS-01155] c10 N71-21483
- MONOSTABLE MULTIVIBRATORS**
- Development and characteristics of resettable monostable pulse generator with charge rundown-timing circuit [NASA-CASE-GSC-11139] c09 N71-27016
- Monostable multivibrator for producing output pulse widths with positive feedback NOR gates [NASA-CASE-MSC-13492-1] c10 N71-28860
- MOSSBAUER EFFECT**
- Mossbauer spectrometer radiation detector [NASA-CASE-LAR-11155-1] c14 N74-15091
- Method and apparatus for vibration analysis utilizing the Mossbauer effect [NASA-CASE-XNP-05882] c35 N75-27329
- MOTION**
- Quick attach mechanism for moving or stationary wires, ropes, or cables [NASA-CASE-XPR-05421] c15 N71-22994
- MOTION PICTURES**
- Real time moving scene holographic camera system [NASA-CASE-MPS-21087-1] c14 N74-17153
- Real time, large volume, moving scene holographic camera system [NASA-CASE-MPS-22537-1] c35 N75-27328
- MOTION SIMULATORS**
- Kinesthetic control simulator --- for pilot training [NASA-CASE-LAR-10276-1] c09 N75-15662
- MOTION STABILITY**
- Hydraulic drive mechanism for leveling isolation platforms [NASA-CASE-XMS-03252] c15 N71-10658
- MOTORS**
- Nonmagnetic thermal motor for magnetometer movement



- [NASA-CASE-XAR-03786] c09 N69-21313  
System for maintaining motor at predetermined speed using digital pulses
- [NASA-CASE-XNP-06892] c09 N71-24805  
Mechanical thermal motor
- [NASA-CASE-MPS-23062-1] c44 N75-27561
- MOUNTING**
- Mounting fixture for supporting thermobulb in pipeline
- [NASA-CASE-NPO-10158] c33 N71-16356  
Mounting apparatus for temperature control system
- [NASA-CASE-NPO-10138] c33 N71-16357  
Inertial component clamping assembly design for spacecraft guidance and control system mounting
- [NASA-CASE-XMS-02184] c15 N71-20813  
Techniques for packaging and mounting printed circuit boards
- [NASA-CASE-MPS-21919-1] c10 N73-25243  
Lubricated journal bearing
- [NASA-CASE-LEW-11076-3] c37 N75-30562
- MOVING TARGET INDICATORS**
- Automatic vehicle location system
- [NASA-CASE-NPO-11850-1] c09 N74-12912
- MULTICHANNEL COMMUNICATION**
- Tape guidance system for multichannel digital recording system
- [NASA-CASE-XNP-09453] c08 N71-19420  
Plural channel data transmission system with quadrature modulation and complementary demodulation
- [NASA-CASE-XAC-06302] c08 N71-19763  
Improved phase lock loop for receiver in multichannel telemetry system with suppressed carrier
- [NASA-CASE-NPO-11593-1] c07 N73-28012  
Miniature multichannel biotelemetry system
- [NASA-CASE-NPO-13065-1] c05 N74-26625  
Medical subject monitoring systems --- multichannel monitoring systems
- [NASA-CASE-MSC-14180-1] c52 N76-14757
- MULTILAYER INSULATION**
- Electrode sealing and insulation for fuel cells containing caustic liquid electrolytes using powdered plastic and metal
- [NASA-CASE-XMS-01625] c15 N71-23022  
Multilayer insulation panels for cryogenic liquid containers
- [NASA-CASE-MPS-14023] c33 N71-25351  
Electrical failure detector in solid rocket propellant motor insulation against thermal degradation by fuel grain
- [NASA-CASE-XNP-03968] c14 N71-27186  
Insulation foil and method of making
- [NASA-CASE-LEW-11484-2] c24 N75-14839  
Method of making an insulation foil
- [NASA-CASE-LEW-11484-1] c24 N75-33181  
Insulation for piping
- [NASA-CASE-MSC-19523-1] c31 N76-16245
- MULTIPLE BEAM INTERVAL SCANNERS**
- Tracking antenna system with array for synchronous satellite or ground based radar
- [NASA-CASE-GSC-10553-1] c07 N71-19854  
Variable beamwidth antenna --- with multiple beam, variable feed system
- [NASA-CASE-GSC-11862-1] c32 N76-18295
- MULTIPLE DOCKING ADAPTERS**
- Probe and drogue assembly for mechanical linking of two space vehicles
- [NASA-CASE-XMS-03613] c31 N71-16346  
Multiple in-line docking capability having intermeshing docking turrets for rotating space stations
- [NASA-CASE-MPS-20855-1] c31 N72-25853
- MULTIPLE OUTPUT PROGRAMS**
- Multi-computer multiple data path hardware exchange system
- [NASA-CASE-NPO-13422-1] c60 N76-14818
- MULTIPLEXING**
- Doppler frequency shift correction device for multiplex communication with Applications Technology Satellites
- [NASA-CASE-IGS-02749] c07 N69-39978  
Multiplexed communication system design including automatic correction of transmission errors introduced by frequency spectrum shifts
- [NASA-CASE-XNP-01306] c07 N71-20814  
Satellite network synchronization system with multiple access to multiplex repeater
- [NASA-CASE-GSC-10390-1] c07 N72-11149
- Apparatus with summing network for compression of analog data by decreasing slope threshold sampling
- [NASA-CASE-NPO-10769] c08 N72-11171  
Development and characteristics of data multiplexer circuit using field effect transistors arranged in tree switching configuration
- [NASA-CASE-NPO-11333] c08 N72-22162  
Telemetry and transmission system with programmed sampling and multiplexing
- [NASA-CASE-GSC-11388-1] c07 N73-24187  
Television multiplexing system, using single crystal controlled clock for signal synchronization
- [NASA-CASE-KSC-10654-1] c07 N73-30115  
Asynchronous, multiplexing, single line transmission and recovery data system --- for satellite use
- [NASA-CASE-NPO-13321-1] c32 N75-26195  
Correlation type phase detector --- with time correlation integrator for frequency multiplexed signals
- [NASA-CASE-GSC-11744-1] c33 N75-26243
- MULTIPLIERS**
- Pulse duration modulation multiplier system
- [NASA-CASE-XER-09213] c07 N71-12390  
Design and development of variable pulse width multiplier
- [NASA-CASE-XLA-02850] c09 N71-20447  
Capacitance multiplier and filter synthesizing network
- [NASA-CASE-NPO-11948-1] c10 N74-32712
- MULTISPECTRAL PHOTOGRAPHY**
- Computerized optical system for producing multiple images of a scene simultaneously
- [NASA-CASE-MSC-12404-1] c23 N73-13661  
An optical process for producing classification maps from multispectral data
- [NASA-CASE-MSC-14472-1] c13 N74-32780
- MULTISTAGE ROCKET VEHICLES**
- Techniques for recovery of multistage rocket vehicles by providing lifting surfaces on individual sections
- [NASA-CASE-XNP-00389] c31 N70-34176  
Steerable solid propellant rocket motor adapted to effect payload orientation as multistage rocket stage or reduce velocity as retrorocket
- [NASA-CASE-XNP-00234] c28 N70-38645  
Multi-mission space vehicle module stage design
- [NASA-CASE-XNP-01543] c31 N71-17730  
Separation mechanism for use between stages of multistage rocket vehicles
- [NASA-CASE-XLA-00188] c15 N71-22874  
Development of remotely controlled shaped charge for lateral displacement of rocket stages after separation
- [NASA-CASE-XLA-04804] c31 N71-23008  
Frangible connecting link suitable for rocket stage separation
- [NASA-CASE-MSC-11849-1] c15 N72-22488
- MULTIVIBRATORS**
- Extra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit
- [NASA-CASE-XGS-00381] c09 N70-34819  
Variable frequency magnetic coupled multivibrator with temperature compensated frequency control circuit
- [NASA-CASE-XGS-00458] c09 N70-38604  
Variable frequency magnetic coupled multivibrator with output signal of constant amplitude and waveform
- [NASA-CASE-XGS-00131] c09 N70-38995  
Improved semiconductor multivibrator circuit which approaches 100 percent efficiency
- [NASA-CASE-XAC-00942] c10 N71-16042  
Transistorized dc-coupled multivibrator with noninverted output signal
- [NASA-CASE-XNP-09450] c10 N71-18723  
One shot multivibrator circuit for producing long duration output pulses
- [NASA-CASE-ARC-10137-1] c09 N71-28468
- MUSCLES**
- Subminiature insertable force transducer --- including a strain gage to measure forces in muscles
- [NASA-CASE-NPO-13423-1] c33 N75-31329

## MUSCULAR FUNCTION

Miniature muscle displacement transducer  
[NASA-CASE-NPO-13519-1] c33 N76-19338

## MUSCULOSKELETAL SYSTEM

Method and apparatus for applying compressional forces to skeletal structure of subject to simulate force during ambulatory conditions  
[NASA-CASE-ARC-10100-1] c05 N71-24738

## MYOCARDIUM

Myocardium wall thickness transducer  
[NASA-CASE-NPO-13644-1] c35 N75-22689

## N

## NACELLES

Deflector for preventing objects from entering nacelle inlets of jet aircraft  
[NASA-CASE-XLE-00388] c28 N70-34788  
Afterburner-equipped jet engine nacelle with slotted configuration afterbody  
[NASA-CASE-XLA-10450] c28 N71-21493

## NAVIGATION AIDS

Binocular attachment --- for display of numerical information in the field of view of the binoculars  
[NASA-CASE-LAR-11782-1] c35 N75-30516  
Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c04 N76-20114

## NAVIGATION INSTRUMENTS

Sun angle calculator  
[NASA-CASE-MSC-12617-1] c35 N75-15019

## NAVIGATION SATELLITES

Satellite aided aircraft collision avoidance system effective for large number of aircraft  
[NASA-CASE-ERC-10090] c21 N71-24948

## NEAR INFRARED RADIATION

Collimator for analyzing spatial location of near and distant sources of radiation  
[NASA-CASE-MFS-20546-2] c14 N73-30389

## NEGATIVE FEEDBACK

Complementary regenerative transistorized switch circuit employing positive and negative feedback  
[NASA-CASE-XGS-02751] c09 N71-23015

## NETWORK SYNTHESIS

Left and right hand circular electromagnetic polarization excitation by phase shifter and hybrid networks  
[NASA-CASE-GSC-10021-1] c09 N71-24595  
High speed phase detector design indicating phase relationship between two square wave input signals  
[NASA-CASE-XNP-01306-2] c09 N71-24596

## NEUTRALIZERS

Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c33 N75-27265

## NEUTRON EMISSION

Deuterium pass through target --- neutron emitting target  
[NASA-CASE-LEW-11866-1] c72 N76-15860

## NICKEL

Process for producing dispersion strengthened nickel with aluminum comprising metallic matrices embedded with oxides or other hyperfine compounds  
[NASA-CASE-XLE-06969] c17 N71-24142  
Selective nickel deposition on irradiation sensitive compounds  
[NASA-CASE-LEW-10965-1] c15 N72-25452  
Brazing alloy composition  
[NASA-CASE-XNP-06053] c26 N75-27126

## NICKEL ALLOYS

Preparation of nickel alloys for jet turbine blades operating at high temperatures  
[NASA-CASE-XLE-00151] c17 N70-33283  
Nickel alloy series for aerospace structures subjected to high temperatures  
[NASA-CASE-XLE-00283] c17 N70-36616  
Nickel base alloy with resistance to oxidation at high temperatures and superior stress-rupture properties  
[NASA-CASE-XLE-02082] c17 N71-16026  
High strength nickel based alloys  
[NASA-CASE-LEW-10874-1] c17 N72-22535  
Diffusion welding --- heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c15 N74-21055

A zirconium modified nickel-copper alloy  
[NASA-CASE-LEW-12245-1] c26 N75-26087  
Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c26 N75-29236

## NICKEL BASE ALLOY

Nickel base alloy  
[NASA-CASE-LEW-12270-1] c26 N76-14247

## NICKEL CADMIUM BATTERIES

Heat flow calorimeter --- measures output of Ni-Cd batteries  
[NASA-CASE-GSC-11434-1] c14 N74-27859

## NICKEL COATINGS

Intermetallic chromium containing nickel aluminide for high temperature corrosion protection of stainless steels  
[NASA-CASE-LEW-11267-1] c17 N73-32414

## NICKEL COMPOUNDS

Including didymium hydrate in nickel hydroxide of positive electrode of storage batteries to increase ampere hour capacity  
[NASA-CASE-XGS-03505] c03 N71-10608  
Brazing alloy  
[NASA-CASE-XNP-03878] c26 N75-27127

## NICKEL PLATE

Nickel plating onto etched aluminum castings  
[NASA-CASE-XNP-04148] c17 N71-24830

## NIOBIUM

Organometallic compounds of niobium and tantalum useful for film deposition  
[NASA-CASE-XNP-04023] c06 N71-28808  
A length controlled stabilized mode-lock Nd:YAG laser  
[NASA-CASE-GSC-11571-1] c36 N76-17384

## NITRIDES

Growth of gallium nitride crystals  
[NASA-CASE-LAR-11302-1] c25 N75-13054

## NITRILES

Intumescent paint containing nitrile rubber for fire protection  
[NASA-CASE-ARC-10196-1] c18 N73-13562  
Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-1] c06 N74-34579

## NITROAMINES

Nitroaniline sulfate, intumescent paints  
[NASA-CASE-ARC-10099-1] c18 N71-15469  
Mercaptan terminated polymer containing sulfonic acid salts of nitrosubstituted aromatic amines for heat and moisture resistant coatings  
[NASA-CASE-ARC-10325] c06 N72-25147

## NITROGEN

The 3-5 photocathode with nitrogen doping for increased quantum efficiency --- using acceptor materials  
[NASA-CASE-NPO-12134-1] c33 N75-16745

## NITROGEN DIOXIDE

Method for detecting pollutants --- ozone, nitrogen dioxide, carbon dioxide  
[NASA-CASE-LAR-11405-1] c35 N75-15938

## NITROGEN TETROXIDE

Gas chromatographic method for determining water in nitrogen tetroxide rocket propellant  
[NASA-CASE-NPO-10234] c06 N72-17094

## NITROGUANIDINE

Solid propellant stabilizer containing nitroguanidine  
[NASA-CASE-NPO-12000] c27 N72-25699

## NOISE GENERATORS

Pseudo-noise test set for communication system evaluation --- test signals  
[NASA-CASE-MFS-22671-1] c35 N75-21582  
Method of and means for testing a tape record/playback system  
[NASA-CASE-MFS-22671-2] c35 N75-31418

## NOISE METERS

Instrumentation for measurement of aircraft noise and sonic boom  
[NASA-CASE-LAR-11173-1] c35 N75-19614

## NOISE REDUCTION

Upper surface, external flow, jet-augmented flap configuration for high wing jet aircraft for noise reduction  
[NASA-CASE-XLA-00087] c02 N70-33332  
Cassegrain antenna subreflector flange for suppressing ground noise and increasing antenna transmitting efficiency  
[NASA-CASE-XNP-00683] c09 N70-35425

- Device for adding water to high velocity exhaust jets to reduce velocity, noise, and temperature  
[NASA-CASE-XMF-01813] c28 N70-41582
- Variable time constant, wide frequency range smoothing network for noise removal from pulse chains  
[NASA-CASE-XGS-01983] c10 N70-41964
- Digital telemetry system apparatus to reduce tape recorder wow and flutter noise during playback  
[NASA-CASE-XGS-01812] c07 N71-23001
- Audio signal processing system for noise surge elimination at low amplitude audio input  
[NASA-CASE-MSC-12223-1] c07 N71-26181
- Variable frequency nuclear magnetic resonance spectrometer providing drive signals over wide frequency range and minimizing noise effects  
[NASA-CASE-XNP-09830] c14 N71-26266
- Noise elimination in coherent imaging system by axial rotation of optical lens for spectral distribution of degrading affects  
[NASA-CASE-GSC-11133-1] c23 N72-11568
- Audio equipment for removing impulse noise from audio signals  
[NASA-CASE-NPO-11631] c10 N73-12244
- Jet aircraft exhaust nozzle for noise reduction  
[NASA-CASE-LAR-10951-1] c28 N73-19819
- Development of aircraft configuration for reduction of jet aircraft noise by exhausting engine gases over upper surface of wing  
[NASA-CASE-LAR-11087-1] c02 N73-26008
- Method and apparatus for improving operating efficiency and reducing low speed noise for turbine aircraft engines  
[NASA-CASE-LAR-11310-1] c28 N73-31699
- Method for eliminating noise and debris of explosive welding techniques by using complete enclosure  
[NASA-CASE-LAR-10941-2] c15 N73-32371
- Gas turbine exhaust nozzle --- for noise reduction  
[NASA-CASE-LEW-11569-1] c28 N74-15453
- Totally confined explosive welding --- apparatus to reduce noise level and protect personnel during explosive bonding  
[NASA-CASE-LAR-10941-1] c15 N74-21057
- Jet exhaust noise suppressor  
[NASA-CASE-LEW-11286-1] c02 N74-27490
- Supersonic fan blading --- noise reduction in turbofan engines  
[NASA-CASE-LEW-11402-1] c28 N74-28226
- Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c28 N74-31270
- Noise suppressor --- for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c02 N74-32418
- Abating exhaust noises in jet engines  
[NASA-CASE-ARC-10712-1] c28 N74-33218
- Television noise reduction device  
[NASA-CASE-MSC-12607-1] c32 N75-21485
- Optical noise suppression device and method --- for optical data processing computer having laser light source  
[NASA-CASE-MSC-12640-1] c74 N75-28871
- Apparatus for reducing aerodynamic noise in a wind tunnel  
[NASA-CASE-MFS-23099-1] c09 N75-32134
- Cascade plug nozzle --- for jet noise reduction  
[NASA-CASE-LAR-11674-1] c07 N76-18117
- Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c07 N76-18131
- NOISE TEMPERATURE**  
Input radio frequency circuit for switching type absolute temperature measuring radiometer for noise sources  
[NASA-CASE-ERC-11020] c14 N71-26774
- NOISE THRESHOLD**  
Threshold extension device for improving operating performance of frequency modulation demodulators by eliminating click-type noise impulses  
[NASA-CASE-MSC-12165-1] c07 N71-33696
- NONDESTRUCTIVE TESTS**  
Nondestructive radiographic tests of resistance welds  
[NASA-CASE-XNP-02588] c15 N71-18613
- Space environment simulator for testing spacecraft components under aerospace conditions  
[NASA-CASE-NPO-10141] c11 N71-24964
- Apparatus for semiautomatic inspection of microfilmed documents for density, resolution, size, and position  
[NASA-CASE-MFS-20240] c14 N71-26788
- Dye penetrant and technique for nondestructive tests of solid surfaces contacted by liquid oxygen  
[NASA-CASE-XMF-02221] c18 N71-27170
- Method and photodetector device for locating abnormal voids in low density materials  
[NASA-CASE-MFS-20044] c14 N71-28993
- Holographic system for nondestructive testing  
[NASA-CASE-MFS-21704-1] c35 N75-25124
- NONEQUILIBRIUM PLASMAS**  
Plasma probes having guard ring and primary sensor at same potential to prevent stray wall current collection in ionized gases  
[NASA-CASE-XLE-00690] c25 N69-39884
- NONFLAMMABLE MATERIALS**  
Intumescent paint containing nitrile rubber for fire protection  
[NASA-CASE-ARC-10196-1] c18 N73-13562
- Process for developing flame retardant elastomeric composition textiles for use in space suits  
[NASA-CASE-MSC-14331-1] c18 N73-27501
- NONLINEAR FEEDBACK**  
Coherent receiver employing nonlinear coherence detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c07 N74-30523
- Nonlinear nonsingular feedback shift registers  
[NASA-CASE-NPO-13451-1] c33 N76-14373
- NONLINEAR SYSTEMS**  
Detector assembly for discriminating first signal with respect to presence or absence of second signal at time of occurrence of first signal  
[NASA-CASE-XMF-00701] c09 N70-40272
- Describing continuous analog to digital converter with parallel digital output and nonlinear feedback  
[NASA-CASE-XAC-04031] c08 N71-18594
- Split range transducer  
[NASA-CASE-XLA-11189] c10 N72-20222
- NOSE CONES**  
Automatically deploying nozzle exit cone extension  
[NASA-CASE-XLE-01640] c31 N71-15637
- Nose cone mounted heat resistant antenna comprising plurality of adjacent layers of silica not introducing paths of high thermal conductivity through ablative shield  
[NASA-CASE-IMS-04312] c07 N71-22984
- NOSE WHEELS**  
Nose gear steering system for vehicles with main skids to provide directional stability after loss of aerodynamic control  
[NASA-CASE-XLA-01804] c02 N70-34160
- NOTCH TESTS**  
Vee-notching device --- with adjustable carriage  
[NASA-CASE-MFS-20730-1] c14 N74-13131
- NOZZLE DESIGN**  
High thrust annular liquid propellant rocket engine and exhaust nozzle design  
[NASA-CASE-XLE-00078] c28 N70-33284
- Penshaped, supersonic exhaust nozzle design  
[NASA-CASE-XLE-00057] c28 N70-38711
- Telescoping-spike supersonic nozzle for turbojet or ramjet engines  
[NASA-CASE-XLE-00005] c28 N70-39899
- Automatically deploying nozzle exit cone extension  
[NASA-CASE-XLE-01640] c31 N71-15637
- Propellant injection assembly having individually removable and replaceable nozzles for liquid fueled rocket engines  
[NASA-CASE-XMF-00968] c28 N71-15660
- Development of collapsible nozzle extension for rocket engines  
[NASA-CASE-MFS-11497] c28 N71-16224
- Design and development of gas turbine combustion unit with nozzle guide vanes for introducing diluent air into combustion gases  
[NASA-CASE-XLE-103477-1] c28 N71-20330
- Prestressed rocket nozzle with ceramic inner rings and refractory metal outer rings  
[NASA-CASE-XNP-02888] c18 N71-21068
- Scanning nozzle plating system --- for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c15 N74-23065

## NOZZLE FLOW

System for aerodynamic control of rocket vehicles by secondary injection of fluid into nozzle exhaust stream  
[NASA-CASE-XLA-01163] c21 N71-15582

Constructing fluid spike nozzle to eliminate heat transfer and high temperature problems inherent in physical spikes  
[NASA-CASE-XGS-01143] c31 N71-15647

Electronic recording system for spatial mass distribution of liquid rocket propellant droplets or vapors ejected from high velocity nozzles  
[NASA-CASE-NPO-10185] c10 N71-26339

Tertiary flow injection system for thrust vectoring of propulsive nozzle flow  
[NASA-CASE-MPS-20831] c28 N71-29153

**NOZZLE INSERTS**

Flexible rocket motor nozzle closure device to aid ignition and protect rocket chamber from foreign objects  
[NASA-CASE-XLA-02651] c28 N70-41967

**NUCLEAR ELECTRIC POWER GENERATION**

Nuclear electric generator for accelerating charged propellant particles in electrostatic propulsion system  
[NASA-CASE-XLE-00818] c22 N70-34248

**NUCLEAR EXPLOSION EFFECT**

Development of method for protecting large and oddly shaped areas from radiant and convective heat  
[NASA-CASE-XNP-01310] c33 N71-28852

**NUCLEAR FUEL BURNUP**

Low cost efficient thermionic converter for use in nuclear reactors  
[NASA-CASE-NPO-13121-1] c22 N73-12702

**NUCLEAR FUEL ELEMENTS**

Tungsten-coated tungsten-uranium dioxide nuclear fuel plates  
[NASA-CASE-XLE-00209] c22 N73-32528

**NUCLEAR MAGNETIC RESONANCE**

Variable frequency nuclear magnetic resonance spectrometer providing drive signals over wide frequency range and minimizing noise effects  
[NASA-CASE-XNP-09830] c14 N71-26266

**NUCLEAR POWER PLANTS**

Development and characteristics of natural circulation radiator for use with nuclear power plants installed in lunar space stations  
[NASA-CASE-XHQ-03673] c33 N71-29046

**NUCLEAR REACTOR CONTROL**

Absorbing gas reactivity control system for minimizing power distribution and perturbation in nuclear reactors  
[NASA-CASE-XLE-04599] c22 N72-20597

**NUCLEAR REACTORS**

Low cost efficient thermionic converter for use in nuclear reactors  
[NASA-CASE-NPO-13121-1] c22 N73-12702

**NUCLEAR ROCKET ENGINES**

Nuclear gaseous reactor for heating working fluid to high temperatures  
[NASA-CASE-XLE-00321] c22 N70-34572

**NUCLEATE BOILING**

Method for improving heat transfer characteristics in nucleate boiling process  
[NASA-CASE-XMS-04268] c33 N71-16277

**NULL ZONES**

Manual control mechanism for adjusting control rod to null position  
[NASA-CASE-XLA-01808] c15 N71-20740

**NUMERICAL CONTROL**

Digital sensor for counting fringes produced by interferometers with improved sensitivity and one photomultiplier tube to eliminate alignment problem  
[NASA-CASE-LAR-10204] c14 N71-27215

**NUMERICAL INTEGRATION**

Apparatus for computing square roots  
[NASA-CASE-XGS-04768] c08 N71-19437

Binary concatenated coding system to measure, count, and record numerical information using minimized number of digits  
[NASA-CASE-MSC-14082-1] c08 N73-16163

**MUTATION**

Flexible turnstile antenna system for reducing nutation in spin-oriented satellites  
[NASA-CASE-XMP-00442] c31 N71-10747

Mutation damper for use on spinning body  
[NASA-CASE-GSC-11205-1] c15 N73-25513

**NUTS (PASTERERS)**

Contamination free separation nut eliminating combustion products from ambient surroundings generated by squib firing  
[NASA-CASE-XGS-01971] c15 N71-15922

Split nut and bolt separation device  
[NASA-CASE-XNP-06914] c15 N71-21489

Device for securing together structural members with axially stretched bolt and nut  
[NASA-CASE-GSC-11149-1] c15 N73-30457

## O

## O RING SEALS

High pressure four-way valve with O ring adapted to pass across inlet port  
[NASA-CASE-XNP-00214] c15 N70-36908

## OCEAN SURFACE

High visibility air sea rescue panel  
[NASA-CASE-MSC-12564-1] c54 N76-15792

## OHMMETERS

Development of electrical system for indicating optimum contact between electrode and metal surface to permit improved soldering operation  
[NASA-CASE-KSC-10242] c15 N72-23497

## OILS

Color photointerpretation of interference colors reflected from thin film oil-coated components in moving gases for gas flow visualization  
[NASA-CASE-XMP-01779] c12 N71-20815

Cross linked polymer system for oil or fat absorption properties  
[NASA-CASE-NPO-11609-1] c06 N72-22114

## OMNIDIRECTIONAL ANTENNAS

Microwave omnidirectional antenna for use on spacecraft  
[NASA-CASE-XLA-03114] c09 N71-22888

Vertically stacked collinear array of independently fed omnidirectional antennas for use in collision warning systems on commercial aircraft  
[NASA-CASE-LAR-10545-1] c09 N72-21244

Omnidirectional antenna array with circumferential slots for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c09 N72-25247

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Survival couch for aircraft or spacecraft crews  
[NASA-CASE-XLA-00118] c05 N70-33285

Cryogenic storage system for gases onboard spacecraft  
[NASA-CASE-XMS-04390] c31 N70-41871

Fiber optic transducers for monitoring and analysis of vibration in aerospace vehicles and onboard equipment  
[NASA-CASE-XMP-02433] c14 N71-10616

Design and construction of satellite appendage tie-down cord  
[NASA-CASE-XGS-02554] c31 N71-21064

Satellite aided aircraft collision avoidance system effective for large number of aircraft  
[NASA-CASE-ERC-10090] c21 N71-24948

Closed loop servosystem for variable speed tape recorders onboard spacecraft  
[NASA-CASE-NPO-10700] c07 N71-33613

Collapsible couch system for manned space vehicles  
[NASA-CASE-MSC-13140] c05 N72-11085

Monostable multivibrator for conserving power in spacecraft systems  
[NASA-CASE-GSC-10082-1] c10 N72-20221

Delayed simultaneous appendage release mechanism for use on spacecraft equipped with despin mechanisms and releasable components  
[NASA-CASE-GSC-10814-1] c03 N73-20039

Electronic strain level counter on in-flight aircraft  
[NASA-CASE-LAR-10756-1] c32 N73-26910

Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c04 N76-20114

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Ultrasonic device for ophthalmic eye surgery with safe removal of macerated material  
[NASA-CASE-LEW-11669-1] c05 N73-27062

Ophthalmic liquifaction pump  
[NASA-CASE-LEW-12051-1] c52 N75-33640

**OPTICAL COMMUNICATION**

Fabry-Perot interferometer retrodirective

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[NASA-CASE-XLA-01090] c07 N71-12389
- Optical communication system with gas filled  
waveguide for laser beam transmission  
[NASA-CASE-HQN-10541-4] c16 N71-27183
- Development and characteristics of optical  
communications system based on modulation of  
light beams  
[NASA-CASE-XLA-01090] c16 N71-28963
- High resolution radar transmitting system for  
transmitting optical pulses to targets  
[NASA-CASE-NPO-11426] c07 N73-26119
- Polarization compensator for optical  
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[NASA-CASE-GSC-11782-1] c07 N74-22827
- Fiber distributed feedback laser  
[NASA-CASE-NPO-13531-1] c36 N75-13243
- Apparatus for simulating optical transmission  
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[NASA-CASE-GSC-11877-1] c74 N76-18913
- Wideband heterodyne receiver for a laser  
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[NASA-CASE-GSC-12053-1] c36 N76-20466
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- Automatic quadrature control and measuring system  
--- using optical coupling circuitry  
[NASA-CASE-MPS-21660-1] c14 N74-21017
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paraboloidal reflecting surfaces  
[NASA-CASE-GSC-11296-1] c23 N73-30666
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- Maksutov spectrograph for low light level research  
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- Combined optical attitude and altitude  
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- Optical device containing rotatable prism and  
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[NASA-CASE-XGS-04173] c19 N71-26674
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- [NASA-CASE-LAR-10726-1] c14 N73-20475
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- Lens assembly for solar furnace or solar simulator  
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[NASA-CASE-GSC-11133-1] c23 N72-11568
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[NASA-CASE-NPO-12130-1] c25 N75-14844
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[NASA-CASE-XMP-03250] c06 N71-23500
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[NASA-CASE-NPO-10701] c06 N71-28620
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[NASA-CASE-HQN-10364] c06 N71-27363
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[NASA-CASE-MFS-22411-1] c15 N74-21058
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- Relief valve to permit slow and fast bleeding rates at difference pressure levels  
[NASA-CASE-XMS-05894-1] c15 N69-21924
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- Rocket engine injector orifice to accommodate changes in density, velocity, and pressure, thereby maintaining constant mass flow rate of propellant into rocket combustion chamber  
[NASA-CASE-XLE-03157] c28 N71-24736

## ORTHOGONAL MULTIPLEXING THEORY

Encoders designed to generate comma free:  
biorthogonal Reed-Muller type code comprising  
conversion of 64 6-bit words into 64 32-bit  
data for communication purposes  
[NASA-CASE-NPO-10595] c10 N71-25917

## ORTHOGONALITY

Device for measuring two orthogonal components  
of force with gallium flotation of measuring  
target for use in vacuum environments  
[NASA-CASE-XLE-04885] c14 N71-23790

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Method for shaping regeneratively cooled rocket  
motor casing having minimum thickness at each  
channel cross section  
[NASA-CASE-XLE-00409] c28 N71-15658

Regeneratively cooled rocket motor casing with  
tapered channels to insure minimum thicknesses  
at each channel cross section for necessary  
strength requirements  
[NASA-CASE-XLE-05689] c28 N71-15659

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[NASA-CASE-XIA-02079] c12 N71-16894

Stabilization system for gravity-oriented  
satellites using single damper rod  
[NASA-CASE-XAC-01591] c31 N71-17729

Suspended mass oscillation damper based on  
impact energy absorption for damping wind  
induced oscillations of tall stacks, antennas,  
and umbilical towers  
[NASA-CASE-LAR-10193-1] c15 N71-27146

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loads on wind tunnel models  
[NASA-CASE-XIA-09480] c11 N71-33612

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Development of electrical circuit for  
suppressing oscillations across inductor  
operating in resonant mode  
[NASA-CASE-ERC-10403-1] c10 N73-26228

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Oscillatory electromagnetic mirror drive system  
for horizon scanners  
[NASA-CASE-XIA-03724] c14 N69-27461

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oscillators converting dc voltage to ac or  
higher dc voltages  
[NASA-CASE-GSC-10041-1] c10 N71-19418

Development and characteristics of oscillating  
static inverter  
[NASA-CASE-XGS-05289] c09 N71-19470

Voltage controlled oscillators and pulse  
amplitude modulation for signal ratio system  
[NASA-CASE-XMF-04367] c09 N71-23545

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oscillator analog to digital converter with  
variable frequency controlled by signal  
passing through conditioning circuit  
[NASA-CASE-LEW-10345-1] c10 N71-25899

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phase stability  
[NASA-CASE-XIA-03893] c10 N71-27271

Variable frequency subcarrier oscillator with  
temperature compensation  
[NASA-CASE-XNP-03916] c09 N71-28810

Inverter oscillator with voltage feedback  
[NASA-CASE-NPO-10760] c09 N72-25254

Controlled oscillator system with a time  
dependent output frequency  
[NASA-CASE-NPO-11962-1] c09 N74-10194

Ultra-stable oscillator with complementary  
transistors  
[NASA-CASE-GSC-11513-1] c09 N74-20862

LC-oscillator with automatic stabilized  
amplitude via bias current control --- power  
supply circuit for transducers  
[NASA-CASE-MPS-21698-1] c09 N74-26732

Ion and electron detector for use in an ICR  
spectrometer  
[NASA-CASE-NPO-13479-1] c14 N74-32890

Frequency modulated oscillator  
[NASA-CASE-MPS-23181-1] c33 N75-21518

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Sign wave generation simulator for variable  
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pulses for oscilloscope display  
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Scan oscilloscope for mapping surface  
sensitivity of photomultiplier tube

[NASA-CASE-LAR-10320-1] c09 N72-23172  
Mechanical exposure interlock device for  
preventing film overexposure in oscilloscope  
camera

[NASA-CASE-LAR-10319-1] c14 N73-32322  
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oscilloscopes

[NASA-CASE-GSC-11582-1] c33 N75-19517

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[NASA-CASE-LAR-11207-1] c35 N75-19613

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Optical characteristics measuring apparatus  
[NASA-CASE-XNP-08840] c23 N71-16365

Helium outgassing process for fused glass  
coating on ion accelerator grid  
[NASA-CASE-LEW-10278-1] c15 N71-28582

Fluid polydimethylsiloxane resin with low  
outgassing properties in cured state  
[NASA-CASE-GSC-11358-1] c06 N73-26100

## OUTPUT

Nonlinear nonsingular feedback shift registers  
[NASA-CASE-NPO-13451-1] c33 N76-14373

## OVENS

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[NASA-CASE-XMS-04318] c15 N69-27871

## OVERVOLTAGE

Spark gap type protective circuit for fast  
sensing and removal of overvoltage conditions  
[NASA-CASE-XAC-08981] c09 N69-39897

Sensing circuit for instantaneous reaction to  
power overloads  
[NASA-CASE-GSC-10667-1] c10 N71-33129

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[NASA-CASE-ARC-10197-1] c09 N74-17929

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Silicide coating process and composition for  
protection of refractory metals from oxidation  
[NASA-CASE-XLE-10910] c18 N71-29040

Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c25 N75-12086

## OXIDATION RESISTANCE

Nickel base alloy with resistance to oxidation  
at high temperatures and superior  
stress-rupture properties  
[NASA-CASE-XLE-02082] c17 N71-16026

Method of protecting the surface of a substrate  
--- by applying aluminide coating  
[NASA-CASE-LEW-11696-1] c37 N75-13261

Duplex aluminized coatings  
[NASA-CASE-LEW-11696-2] c26 N75-19408

High temperature oxidation resistant cermet  
compositions --- for use in thermionic  
converters or diodes  
[NASA-CASE-NPO-13666-1] c27 N76-13293

High temperature resistant cermet and ceramic  
compositions --- for use in thermionic  
converters or diodes  
[NASA-CASE-NPO-13690-1] c27 N76-13294

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prepare star polymers  
[NASA-CASE-NPO-10998-1] c06 N73-32029

## OXIDIZERS

Electrolytically regenerative hydrogen-oxygen  
fuel cells  
[NASA-CASE-XLE-04526] c03 N71-11052

Fuel and oxidizer injection head for thrust  
chamber of reaction engine  
[NASA-CASE-NPO-10046] c28 N72-17843

## OXIMETRY

Ear oximeter for monitoring blood oxygenation  
and pressure, pulse rate, and pressure pulse  
curve, using dc and ac amplifiers  
[NASA-CASE-XAC-05422] c04 N71-23185

## OXYGEN

Analytical test apparatus and method for  
determining oxygen content in alkali liquid  
metal  
[NASA-CASE-XLE-01997] c06 N71-23527

Heated tungsten filter for removing oxygen  
impurities from cesium  
[NASA-CASE-XNP-04262-2] c17 N71-26773

Method for detecting oxygen in gas by  
thermoluminescence  
[NASA-CASE-LAR-10668-1] c06 N73-16106

Method for obtaining oxygen from lunar or  
similar soil  
[NASA-CASE-MSC-12408-1] c13 N74-13011

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[NASA-CASE-IPR-08403] c05 N71-11202
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[NASA-CASE-NPO-12061-1] c27 N76-16228
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[NASA-CASE-MPS-21415-1] c05 N74-20728
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Lead-oxygen dc power supply system  
[NASA-CASE-MPS-23059-1] c44 N75-16078
- OXYGEN SUPPLY EQUIPMENT**  
Self-contained breathing apparatus  
[NASA-CASE-MSC-14733-1] c54 N75-13534  
Gas compression analysis --- for oxygen supply equipment  
[NASA-CASE-MSC-14757-1] c37 N76-13496
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[NASA-CASE-LAR-11405-1] c35 N75-15938

## P

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[NASA-CASE-XLE-10529] c14 N69-23191  
Semiconductor p-n junction on needle apex to provide stress and strain sensor  
[NASA-CASE-XLA-04980] c09 N69-27422  
Improving radiation resistance of silicon semiconductor junctions by doping with lithium  
[NASA-CASE-XGS-07801] c09 N71-12513  
Silicon radiation detecting probe design for in vivo biomedical use  
[NASA-CASE-XMS-01177] c05 N71-19440  
Electrode connection for n-on-p silicon solar cell  
[NASA-CASE-XLE-04787] c03 N71-20492  
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[NASA-CASE-XNP-01961] c26 N71-29156  
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[NASA-CASE-XLA-04980-2] c14 N72-28438  
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[NASA-CASE-ERC-10339-1] c18 N73-30532
- P-TYPE SEMICONDUCTORS**  
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[NASA-CASE-XLE-02798] c26 N71-23654  
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[NASA-CASE-MPS-22343-1] c09 N74-34638
- PACKAGES**  
Impact testing machine for imparting large impact forces on high velocity packages  
[NASA-CASE-XNP-04817] c14 N71-23225  
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[NASA-CASE-LAR-10102-1] c05 N72-23085
- PACKAGING**  
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[NASA-CASE-XLA-00137] c15 N70-33180  
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[NASA-CASE-XLA-00138] c31 N70-37981  
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[NASA-CASE-MPS-20855] c15 N73-27405
- PACKING DENSITY**  
Micropacked column for rapid chromatographic analysis using low gas flow rates  
[NASA-CASE-INP-04816] c06 N69-39936
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[NASA-CASE-ARC-10099-1] c18 N71-15469  
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[NASA-CASE-XGS-04799] c18 N71-24183  
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[NASA-CASE-XNP-02139] c18 N71-24184
- PALLADIUM COMPOUNDS**  
Preventing pressure buildup in electrochemical cells by reacting palladium oxide with evolved hydrogen  
[NASA-CASE-XGS-01419] c03 N70-41864  
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[NASA-CASE-MSC-13335-1] c06 N72-31140

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- Nut and bolt fastener permitting all-directional movement of skin sections with respect to supporting structure  
[NASA-CASE-XLA-01807] c15 N71-10799  
Multilayer insulation panels for cryogenic liquid containers  
[NASA-CASE-MPS-14023] c33 N71-25351  
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[NASA-CASE-XNP-03413] c03 N71-26726  
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[NASA-CASE-XLA-08916] c15 N71-29018  
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[NASA-CASE-ERC-10364] c18 N72-25540  
Fabrication of light weight panel structure using pairs of elongate hollow ribs of semicircular configuration  
[NASA-CASE-LAR-11052-1] c32 N73-13929  
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[NASA-CASE-MPS-20335-1] c14 N74-10415  
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[NASA-CASE-XHQ-02146] c18 N75-27040  
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[NASA-CASE-LAR-11181-1] c39 N75-31479

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- Device for improving efficiency of parabolic horn antenna system for linearly polarized signals  
[NASA-CASE-XNP-00611] c09 N70-35219  
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[NASA-CASE-NPO-10173] c15 N71-24696

## PARABOLIC REFLECTORS

- Device for improving efficiency of parabolic reflector horn for linearly or circularly polarized waves  
[NASA-CASE-XNP-00540] c09 N70-35382  
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[NASA-CASE-XLA-04622] c03 N70-41580  
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[NASA-CASE-XMS-03454] c09 N71-20658  
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[NASA-CASE-GSC-11013-1] c09 N73-19234  
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[NASA-CASE-GSC-11046-1] c07 N73-28013  
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[NASA-CASE-GSC-11968-1] c32 N76-15329

## PARABOLOID MIRRORS

- Optical data processing system using paraboloidal reflecting surfaces  
[NASA-CASE-GSC-11296-1] c23 N73-30666  
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[NASA-CASE-MPS-21372-1] c14 N74-27866

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- Multiple parachute system for landing control of Apollo type spacecraft  
[NASA-CASE-XLA-00898] c02 N70-36804  
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[NASA-CASE-XLA-00195] c02 N70-38009  
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[NASA-CASE-XMS-04072] c15 N70-42017
- Development and operating principles of gas generator for deploying recovery parachutes from space capsules during atmospheric entry  
[NASA-CASE-LAR-10549-1] c31 N73-13898
- PARACHUTE FABRICS**  
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[NASA-CASE-LAR-10776-1] c02 N74-10034
- PARACHUTES**  
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[NASA-CASE-GSC-11077-1] c02 N73-13008  
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[NASA-CASE-LAR-11575-1] c02 N76-16014
- PARAGLIDERS**  
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[NASA-CASE-XLA-00898] c02 N70-36804
- PARALLAX**  
Projection system for display of parallax and perspective  
[NASA-CASE-MFS-23194-1] c74 N76-13909
- PARALLEL PLATES**  
Describing instrument capable of measuring true shear viscosity of liquids and viscoelastic materials  
[NASA-CASE-XNP-09462] c14 N71-17584
- PARAMETRIC AMPLIFIERS**  
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[NASA-CASE-LAR-10253-1] c09 N72-25258  
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[NASA-CASE-GSC-11617-1] c09 N74-32660
- PARAWINGS**  
Method for deployment of flexible wing glider from space vehicle with minimum impact and loading  
[NASA-CASE-XMS-00907] c02 N70-41630
- PARTIAL PRESSURE**  
Equipment for measuring partial water vapor pressure in gas tank  
[NASA-CASE-XMS-01618] c14 N71-20741
- PARTICLE ACCELERATION**  
Selector mechanism for mechanical separation and discrimination of high velocity molecular particles  
[NASA-CASE-XLE-01533] c11 N71-10777  
Method and apparatus for use in forming highly collimated beam of microparticles with high charge to mass ratio and injecting beam into electrostatic accelerating tube  
[NASA-CASE-XGS-06628] c24 N71-16213
- PARTICLE ACCELERATOR TARGETS**  
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[NASA-CASE-NPO-13112-1] c11 N74-26767  
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[NASA-CASE-LEW-11866-1] c72 N76-15860  
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[NASA-CASE-LEW-11981-1] c37 N76-20486
- PARTICLE BEAMS**  
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[NASA-CASE-XLE-00243] c14 N70-38602  
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[NASA-CASE-HQN-10740-1] c24 N74-19310
- PARTICLE COLLISIONS**  
Momentum-velocity analyzer for measuring minute space particles  
[NASA-CASE-XMS-04201] c14 N71-22990
- PARTICLE DENSITY (CONCENTRATION)**  
Particle detector for measuring micrometeoroid velocity in space  
[NASA-CASE-XLA-00495] c14 N70-41332
- PARTICLE EMISSION**  
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[NASA-CASE-XGS-03230] c14 N71-23401  
Apparatus for detecting particle emission lower than noise level of multiplier tube
- [NASA-CASE-XLA-07813] c14 N72-17328
- PARTICLE ENERGY**  
Particle detector for indicating incidence and energy of minute space particles  
[NASA-CASE-XLA-00135] c14 N70-33322
- PARTICLE MASS**  
Cosmic dust analyzer  
[NASA-CASE-MSC-13802-2] c35 N76-15431
- PARTICLE MOTION**  
Moving particle composition analyzer  
[NASA-CASE-GSC-11889-1] c35 N76-16393
- PARTICLE PRODUCTION**  
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[NASA-CASE-LEW-11390-3] c11 N73-28128
- PARTICLE SIZE DISTRIBUTION**  
Micropacked column for rapid chromatographic analysis using low gas flow rates  
[NASA-CASE-XNP-04816] c06 N69-39936  
Apparatus for producing hydrocarbon slurry containing small particles of magnesium for use as jet aircraft fuel  
[NASA-CASE-XLE-00010] c15 N70-33382  
Production of high strength refractory compounds and microconstituents into refractory metal matrix  
[NASA-CASE-XLE-03940] c18 N71-26153  
Frequency scanning particle size spectrometer  
[NASA-CASE-NPO-13606-1] c35 N75-19627  
Particle size spectrometer and refractometer  
[NASA-CASE-NPO-13614-1] c35 N75-19628  
Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c37 N75-19683  
Forward-scatter polarimeter for determining the gaseous depolarization factor in the presence of polluting polydispersed particles  
[NASA-CASE-NPO-13756-1] c35 N76-14434
- PARTICLE TRAJECTORIES**  
Micrometeoroid velocity and trajectory analyzer  
[NASA-CASE-GSC-11892-1] c35 N76-15433
- PARTICLES**  
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[NASA-CASE-XNP-09770] c15 N71-20440  
Development of apparatus for producing metal powder particles of controlled size  
[NASA-CASE-XLE-06461-2] c17 N72-28535
- PARTICULATE SAMPLING**  
Design and development of device to prevent clogging in hoppers containing particulate materials  
[NASA-CASE-LAR-10961-1] c15 N73-12496  
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[NASA-CASE-HQN-10037-1] c14 N73-27376  
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[NASA-CASE-LEW-11583-1] c15 N74-13199  
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[NASA-CASE-MFS-21395-1] c14 N74-26948  
Sampler of gas borne particles  
[NASA-CASE-NPO-13396-1] c35 N76-18401
- PASSAGEWAYS**  
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[NASA-CASE-XMS-10993] c15 N71-28936
- PASSIVE SATELLITES**  
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[NASA-CASE-XLA-00210] c30 N70-40309  
Apparatus for measuring backscatter and transmission characteristics of sample segment of large spherical passive satellites  
[NASA-CASE-XGS-02608] c07 N70-41678  
Forming inflatable panels erectable in space for passive communication satellite  
[NASA-CASE-XLA-03497] c15 N71-23052
- PATIENTS**  
Stretcher with rigid head and neck support with capability of supporting immobilized person in vertical position for removal from vehicle hatch to exterior also useful as splint stretcher  
[NASA-CASE-XNP-06589] c05 N71-23159
- PATTERN RECOGNITION**  
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[NASA-CASE-XLA-00203] c14 N70-34161

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- Plastic foam generator for space vehicle  
instrument payload package flotation in water  
landing  
[NASA-CASE-XLA-00838] c03 N70-36778
- Stage separation system for spinning vehicles  
and payloads  
[NASA-CASE-XLA-02132] c31 N71-10582
- Payload/spent rocket engine case separation system  
[NASA-CASE-XLA-05369] c31 N71-15687
- High velocity guidance and spin stabilization  
gyro controlled jet reaction system for launch  
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[NASA-CASE-XLA-01339] c31 N71-15692
- Payload soft landing system using stowable gas bag  
[NASA-CASE-XLA-09881] c31 N71-16085
- Zero gravity apparatus utilizing pneumatic  
decelerating means to create payload subjected  
to zero gravity conditions by dropping its  
height  
[NASA-CASE-XMP-06515] c14 N71-23227
- PCM TELEMETRY**
- Variable time constant, wide frequency range  
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chains  
[NASA-CASE-XGS-01983] c10 N70-41964
- Data acquisition and processing system with  
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information  
[NASA-CASE-NPO-12107] c08 N71-27255
- High speed direct binary to binary coded decimal  
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[NASA-CASE-NSC-10326] c08 N72-21197
- PELLETS**
- Supporting structure for simultaneous exposure  
of pellets to X rays  
[NASA-CASE-XNP-06031] c15 N71-15606
- PELTIER EFFECTS**
- Use of silicon controlled rectifier shorting  
circuit to protect thermoelectric generator  
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[NASA-CASE-XGS-04808] c03 N69-25146
- PENETRANTS**
- Dye penetrant and technique for nondestructive  
tests of solid surfaces contacted by liquid  
oxygen  
[NASA-CASE-XMP-02221] c18 N71-27170
- PENETRATION**
- Method and device for detection of surface  
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[NASA-CASE-MSC-14187-1] c14 N74-32879
- PENTROMETERS**
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for measuring physical properties of lunar  
surface  
[NASA-CASE-XLA-00934] c14 N71-22765
- Portable penetrometer for analyzing soil  
characteristics  
[NASA-CASE-MPS-20774] c14 N73-19420
- Auger-type soil penetrometer for burrowing into  
soil formations  
[NASA-CASE-XNP-05530] c14 N73-32321
- PERCEPTION**
- Measuring method for cutaneous perception using  
instrument with elongated tubular housing  
[NASA-CASE-MSC-13609-1] c05 N72-25122
- PERFLUORO COMPOUNDS**
- Chemical synthesis of hydroxy terminated  
perfluoro ethers as intermediates for highly  
fluorinated polyurethane resins  
[NASA-CASE-NPO-10768] c06 N71-27254
- Perfluoro polyether acyl fluorides  
[NASA-CASE-NPO-10765] c06 N72-20121
- Reaction of polyperfluoropolyenes with fluorine  
to produce saturated polymer chain or create  
reactive sites on chain  
[NASA-CASE-NPO-10862] c06 N72-22107
- Silphenylenesiloxane polymer with in-chain  
perfluoroalkyl groups  
[NASA-CASE-MPS-20979] c06 N72-25151
- Polymerization of perfluorobutadiene  
[NASA-CASE-NPO-10863-2] c06 N72-25152
- Formation of polyurethane resins from hydroxy  
terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c06 N72-27144
- Process for preparing disilanolols with in-chain  
perfluoroalkyl groups  
[NASA-CASE-MPS-20979-2] c06 N73-32030
- Perfluoro alkylene dioxy-bis-(4-phthalic  
anhydrides and  
oxy-bis-(perfluoroalkyleneoxyphthalic  
anhydrides  
[NASA-CASE-MPS-22356-1] c23 N75-30256
- PERFORATED PLATES**
- Helium outgassing process for fused glass  
coating on ion accelerator grid  
[NASA-CASE-LEW-10278-1] c15 N71-28582
- PERFORATED SHELLS**
- Method of fabricating an article with cavities  
--- with thin bottom walls  
[NASA-CASE-LAR-10318-1] c14 N74-18089
- PERFORMANCE**
- Thermocouples of tantalum and rhenium alloys for  
more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c35 N76-13454
- Thermocouples of molybdenum and iridium alloys  
for more stable vacuum-high temperature  
performance  
[NASA-CASE-LEW-12174-1] c35 N76-19407
- PERFORMANCE TESTS**
- Flexible, frangible electrochemical cell and  
package for operation in low temperature  
environment  
[NASA-CASE-XGS-10010] c03 N72-15986
- Test method and equipment for identifying faulty  
cells or connections in solar cell assemblies  
[NASA-CASE-NPO-10401] c03 N72-20033
- Development of apparatus for detonating  
explosive devices in order to determine forces  
generated and detonation propagation rate  
[NASA-CASE-LAR-10800-1] c33 N72-27959
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- Water insoluble, cationic permselective membrane  
[NASA-CASE-NPO-11091] c18 N72-22567
- PEROXIDES**
- Low pressure perfluorobutadiene polymerization  
with peroxide catalysts  
[NASA-CASE-NPO-10447] c06 N70-11252
- PERSPIRATION**
- Manufacturing process for making perspiration  
resistant-stress resistant biopotential  
electrode  
[NASA-CASE-MSC-90153-2] c05 N72-25120
- PERTURBATION**
- Absorbing gas reactivity control system for  
minimizing power distribution and perturbation  
in nuclear reactors  
[NASA-CASE-XLE-04599] c22 N72-20597
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- Dual wavelength scanning Doppler velocimeter ---  
without perturbation of flow fields  
[NASA-CASE-ABC-10637-1] c35 N75-16783
- PHASE COHERENCE**
- Apparatus for estimating amplitude and sign of  
phase difference or time lag between two signals  
[NASA-CASE-NPO-11203] c10 N72-20224
- Coherent receiver employing nonlinear coherence  
detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c07 N74-30523
- PHASE CONTROL**
- System designed to reduce time required for  
obtaining synchronization in data  
communication with spacecraft utilizing  
pseudonoise codes  
[NASA-CASE-NPO-10214] c10 N71-26577
- Wideband voltage controlled oscillator with high  
phase stability  
[NASA-CASE-XLA-03893] c10 N71-27271
- Voltage controlled oscillator circuit for  
two-phase induction motor control  
[NASA-CASE-MPS-21465-1] c10 N73-32145
- System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c33 N75-19519
- Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c33 N75-27254
- PHASE DEMODULATORS**
- Development of phase demodulation system with  
two phase locked loops  
[NASA-CASE-XNP-00777] c10 N71-19469
- PHASE DETECTORS**
- Detector assembly for discriminating first  
signal with respect to presence or absence of  
second signal at time of occurrence of first  
signal

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phase PCM data signals  
[NASA-CASE-XGS-01590] c07 N71-12392  
High speed phase detector design indicating  
phase relationship between two square wave  
input signals  
[NASA-CASE-XNP-01306-2] c09 N71-24596  
Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c10 N74-14956  
Low distortion automatic phase control circuit  
--- voltage controlled phase shifter  
[NASA-CASE-MFS-21671-1] c10 N74-22885  
Correlation type phase detector --- with time  
correlation integrator for frequency  
multiplexed signals  
[NASA-CASE-GSC-11744-1] c33 N75-26243  
Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c35 N75-27331
- PHASE DEVIATION**  
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utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c09 N74-17927
- PHASE LOCK DEMODULATORS**  
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switching amplifier circuit  
[NASA-CASE-XNP-01107] c10 N71-28859  
Linear phase demodulator  
[NASA-CASE-GSC-12018-1] c17 N76-13169
- PHASE LOCKED SYSTEMS**  
System for phase locking onto carrier frequency  
signal located within receiver bandpass  
[NASA-CASE-XGS-04994] c09 N69-21543  
Phase locked loop with sideband rejecting  
properties in continuous wave tracking radar  
[NASA-CASE-XNP-02723] c07 N70-41680  
Development of automatic frequency  
discriminators and control for phase lock loop  
providing frequency preset capabilities  
[NASA-CASE-XMP-08665] c10 N71-19467  
Development and characteristics of burst  
synchronization detection system  
[NASA-CASE-XMS-05605-1] c10 N71-19468  
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two phase locked loops  
[NASA-CASE-XNP-00777] c10 N71-19469  
Diversity receiving system with diversity phase  
lock  
[NASA-CASE-XGS-01222] c10 N71-20841  
Phase locked phase modulation system with  
voltage controlled oscillator for final phase  
linearity  
[NASA-CASE-XNP-05382] c10 N71-23544  
Video sync processor with phase locked system  
[NASA-CASE-KSC-10002] c10 N71-25865  
Characteristics of data-aided carrier tracking  
loop used for tracking carrier in angle  
modulated communications system  
[NASA-CASE-NPO-11282] c10 N73-16205  
Filter for third order phase locked loops in  
signal receivers  
[NASA-CASE-NPO-11941-1] c10 N73-27171  
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multichannel telemetry system with suppressed  
carrier  
[NASA-CASE-NPO-11593-1] c07 N73-28012  
Automatic carrier acquisition system for phase  
locked loop receiver  
[NASA-CASE-NPO-11628-1] c07 N73-30113  
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the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c33 N75-13139  
Low speed phaselock speed control system --- for  
brushless dc motor  
[NASA-CASE-GSC-11127-1] c09 N75-24758  
Digital phase-locked loop  
[NASA-CASE-GSC-11623-1] c33 N75-25040
- PHASE MODULATION**  
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quadrature modulation and complementary  
demodulation  
[NASA-CASE-XAC-06302] c08 N71-19763  
Adaptive notch filter, using modulation  
techniques for reversed phase noise signal  
[NASA-CASE-XMP-01892] c10 N71-22986  
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voltage controlled oscillator for final phase  
linearity  
[NASA-CASE-XNP-05382] c10 N71-23544
- Scanning signal phase and amplitude electronic  
control device with hybrid T waveguide junction  
[NASA-CASE-NPO-10302] c10 N71-26142  
Phase modulator with tuned variable length  
electrical lines including coupling and  
varactor diode circuits  
[NASA-CASE-MSC-13201-1] c07 N71-28429  
Multicarrier communications system for  
transmitting modulated signals from single  
transmitter  
[NASA-CASE-NPO-11548] c07 N73-26118  
Decision feedback loop for tracking a polyphase  
modulated carrier  
[NASA-CASE-NPO-13103-1] c07 N74-20811  
Modulator for tone and binary signals --- phase  
of modulation of tone and binary signals on  
carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c32 N75-24981  
Phase modulator  
[NASA-CASE-LAR-11607-1] c32 N76-10356
- PHASE SHIFT**  
Bipolar phase detector and corrector for split  
phase PCM data signals  
[NASA-CASE-XGS-01590] c07 N71-12392  
Left and right hand circular electromagnetic  
polarization excitation by phase shifter and  
hybrid networks  
[NASA-CASE-GSC-10021-1] c09 N71-24595  
Pulse code modulated data from frequency  
multiplex communications by digital phase  
shift or carrier  
[NASA-CASE-NPO-11338] c08 N72-25208
- PHASE SHIFT CIRCUITS**  
Design of gyrator circuit using operational  
amplifiers to replace ungrounded inductors  
[NASA-CASE-XAC-10608-1] c09 N71-12517  
Phase shifting circuit for selecting phase of  
input signal  
[NASA-CASE-ARC-10269-1] c10 N72-16172  
Continuously variable, voltage-controlled phase  
shifter  
[NASA-CASE-NPO-11129] c09 N72-33204  
Voltage controlled oscillator circuit for  
two-phase induction motor control  
[NASA-CASE-MFS-21465-1] c10 N73-32145  
Low distortion automatic phase control circuit  
--- voltage controlled phase shifter  
[NASA-CASE-MFS-21671-1] c10 N74-22885
- PHASE SHIFT KEYING**  
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modulated carrier  
[NASA-CASE-NPO-13103-1] c07 N74-20811  
Differential phase shift keyed communication  
system  
[NASA-CASE-MSC-14065-1] c07 N74-26654  
Differential phase shift keyed signal resolver  
[NASA-CASE-MSC-14066-1] c10 N74-27705
- PHASE SWITCHING INTERFEROMETERS**  
Interferometric tuning acquisition and tracking  
radar antenna system  
[NASA-CASE-XMS-09610] c07 N71-24625
- PHASE TRANSFORMATIONS**  
Magnetohydrodynamic generator for mixing  
nonconductive gas and liquid metal mist to  
form slugs  
[NASA-CASE-XLE-02083] c03 N69-39983  
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[NASA-CASE-HQN-10364] c06 N71-27363

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[NASA-CASE-XGS-01159] c21 N71-10678  
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of two parallel grids  
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## PHOTOGRAPHIC FILM

Longitudinal film gate and lock mechanism for  
securing film in motion picture cameras under  
vibration and high acceleration loads  
[NASA-CASE-LAR-10686] c14 N71-28935  
Photographic film restoration system using  
Fourier transformation lenses and spatial filter  
[NASA-CASE-MSC-12448-1] c14 N72-20394  
Mechanical exposure interlock device for  
preventing film overexposure in oscilloscope  
camera  
[NASA-CASE-LAR-10319-1] c14 N73-32322  
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for optical data processing computer having  
laser light source  
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Photographic method for measuring viscoelastic  
strain in solid propellants and other materials  
[NASA-CASE-XNP-01153] c32 N71-17645

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of hypervelocity projectiles  
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Recording and reconstructing focused image  
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reconstructing holograms without use of  
reference beam  
[NASA-CASE-ERC-10020] c16 N71-26154  
Multiple image storing system for obtaining  
holographic record on film of high speed  
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[NASA-CASE-MPS-20596] c14 N72-17324  
Phototropic composition of matter with  
sensitivity to ultraviolet light and usable  
for producing positive photographic images  
[NASA-CASE-XGS-03736] c14 N72-22443  
Method for determining thermo-physical  
properties of specimens --- photographic  
recording of changes in thin film phase-change  
temperature indicating material in wind tunnel  
[NASA-CASE-LAR-11053-1] c33 N74-18551

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Multichannel photoionization chamber for  
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and coefficients of gases  
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## PHOTOLYSIS

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[NASA-CASE-NPO-10320] c14 N71-17655  
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cell battery, using semiconductor light  
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[NASA-CASE-NPO-10194] c03 N71-20407  
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[NASA-CASE-XNP-01059] c23 N71-21821  
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the radiant energy wavelength bands from  
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[NASA-CASE-ERC-10174] c14 N72-25409  
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[NASA-CASE-LAR-10728-1] c14 N73-12445  
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for detecting and recording fluorescent  
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[NASA-CASE-ARC-10633-1] c14 N74-26947  
A 2 degree/90 degree laboratory scattering  
photometer  
[NASA-CASE-GSC-12088-1] c35 N76-17369

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Stereo photomicrography system with stereo  
microscope for viewing specimen at various  
magnifications  
[NASA-CASE-LAR-10176-1] c14 N72-20380  
Device for displaying and recording angled views  
of samples to be viewed by microscope  
[NASA-CASE-GSC-11690-1] c14 N73-28499  
Hand-held, lightweight, portable photomicroscope  
[NASA-CASE-ARC-10468-1] c14 N73-33361

## PHOTOMULTIPLIER TUBES

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- spacecraft attitude control  
[NASA-CASE-XNP-03914] c21 N71-10771
- Electronic divider and multiplier for analog electric signals  
[NASA-CASE-XPR-05637] c09 N71-19480
- Circuit design for determining amount of photomultiplier tube light detection utilizing variable current source and dark current signals of opposite polarity  
[NASA-CASE-XMS-03478] c14 N71-21040
- Apparatus for detecting particle emission lower than noise level of multiplier tube  
[NASA-CASE-XLA-07813] c14 N72-17328
- Scan oscilloscope for mapping surface sensitivity of photomultiplier tube  
[NASA-CASE-LAR-10320-1] c09 N72-23172
- Design and development of light sensing device for controlling orientation of object relative to sun or other light source  
[NASA-CASE-NPO-11201] c14 N72-27409
- Photomultiplier circuit including means for rapidly reducing the sensitivity thereof --- and protection from radiation damage  
[NASA-CASE-ARC-10593-1] c09 N74-27682
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- Photosensitive light source device for detecting unmanned spacecraft deviation from reference attitude  
[NASA-CASE-XNP-00438] c21 N70-35089
- Light sensitive control system for automatically opening and closing dome of solar optical telescope  
[NASA-CASE-MS-C-10966] c14 N71-19568
- Scan oscilloscope for mapping surface sensitivity of photomultiplier tube  
[NASA-CASE-LAR-10320-1] c09 N72-23172
- Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c14 N74-26946
- Apparatus for calibrating an image dissector tube  
[NASA-CASE-MFS-22208-1] c33 N75-26244
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[NASA-CASE-MFS-20809] c23 N73-13660
- Phototransistor with base collector junction diode for integration into photo sensor arrays  
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- PHOTOTROPISM**
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[NASA-CASE-XGS-03736] c14 N72-22443
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- Photographic method for measuring viscoelastic strain in solid propellants and other materials  
[NASA-CASE-XNP-01153] c32 N71-17645
- PHOTOVOLTAIC CELLS**
- Sensor consisting of photocells mounted on pyramidal base for improved pointing accuracy of planetary trackers  
[NASA-CASE-XNP-04180] c07 N69-39736
- Light sensitive digital aspect sensor for attitude control of earth satellites or space probes  
[NASA-CASE-XGS-00359] c14 N70-34158
- Method of producing output voltage from photovoltaic cell using poly-N-vinyl carbazole complexed with icdine  
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[NASA-CASE-NFS-22458-1] c44 N75-22900
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[NASA-CASE-NPO-11432-2] c14 N74-15090
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[NASA-CASE-LAR-11667-1] c52 N76-19785
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- Chemical and physical properties of synthetic polyurethane polymer prepared by reacting hydroxy carbonate with organic diisocyanate  
[NASA-CASE-MFS-10512] c06 N73-30099
- Ultraviolet and thermally stable polymer compositions --- poly/(diarylsiloxy)/arylazines  
[NASA-CASE-ARC-10592-2] c06 N74-11926
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[NASA-CASE-XLA-00936] c14 N71-14996
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[NASA-CASE-XMS-05365] c14 N71-22993
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[NASA-CASE-GSC-11291-1] c25 N72-33696
- Collimator for analyzing spatial location of near and distant sources of radiation  
[NASA-CASE-MFS-20546-2] c14 N73-30389
- Measuring probe position recorder  
[NASA-CASE-LAR-10806-1] c14 N74-32877
- Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c32 N75-26194
- Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c35 N75-27331
- Capacitive shaft encoder  
[NASA-CASE-ARC-10897-1] c35 N76-12338
- POSITION INDICATORS**  
Rocket-borne aspect sensor consisting of radiation sensor, apertured disk, commutator, and counting circuits  
[NASA-CASE-XGS-08266] c14 N69-27432
- Characteristics and performance of electrical system to determine angular rotation  
[NASA-CASE-XMP-00447] c14 N70-33179
- Magnetic element position sensing device, using misaligned electromagnets  
[NASA-CASE-XGS-07514] c23 N71-16099
- Describing angular position and velocity sensing apparatus  
[NASA-CASE-XGS-05680] c14 N71-17585
- Mosaic semiconductor radiation detector and position indicator systems engineering for low energy particles  
[NASA-CASE-XGS-03230] c14 N71-23401
- Doppler compensated communication system for locating supersonic transport position  
[NASA-CASE-GSC-10087-4] c07 N73-20174
- Meteoroid impact position locator aid for manned space station  
[NASA-CASE-LAR-10629-1] c35 N75-33367
- Position determination systems --- using orbital antenna scan of celestial bodies  
[NASA-CASE-MS-C-12593-1] c17 N76-21250
- POSITIONING**  
Centering device with ultrafine adjustment for use with roundness measuring apparatus  
[NASA-CASE-XMP-00480] c14 N70-39898
- Portable device for aligning surfaces of two adjacent wall or sheet sections for joining at point of junction  
[NASA-CASE-XMP-01452] c15 N70-41371
- Electro-optical/computer system for aligning large structural members and maintaining correct position  
[NASA-CASE-XMP-02029] c14 N70-41955
- Manual control mechanism for adjusting control rod to null position  
[NASA-CASE-XLA-01808] c15 N71-20740
- Rotating raster generator  
[NASA-CASE-FRC-10071-1] c07 N74-20813
- Cyclical bi-directional rotary actuator  
[NASA-CASE-GSC-11883-1] c37 N75-29430
- POSITIONING DEVICES (MACHINERY)**  
Swivel support for gas bearing for position adjustment between ball and supporting cup  
[NASA-CASE-XMP-07808] c15 N71-23812
- Caterpillar micropositioner for positioning machine tools adjacent to workpiece  
[NASA-CASE-GSC-10780-1] c14 N72-16283
- Positioning mechanism for converting translatory motion into rotary motion  
[NASA-CASE-NPO-10679] c15 N72-21462
- Design and development of test stand system for supporting test items in vacuum chamber  
[NASA-CASE-MFS-21362] c11 N73-20267
- Method and apparatus for optically monitoring the angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c23 N74-21304
- Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c35 N75-15014
- Reference apparatus for medical ultrasonic transducer  
[NASA-CASE-ARC-10753-1] c54 N75-27760
- POSITIVE FEEDBACK**  
Complementary regenerative transistorized switch circuit employing positive and negative feedback  
[NASA-CASE-XGS-02751] c09 N71-23015
- POTABLE WATER**  
Potable water reclamation from human wastes in zero-G environment  
[NASA-CASE-XLA-03213] c05 N71-11207
- Utilization of solar radiation by solar still for converting salt and brackish water into potable water  
[NASA-CASE-XMS-04533] c15 N71-23086
- Chlorine generator for purifying water in life support systems of manned spacecraft  
[NASA-CASE-XLA-08913] c14 N71-28933
- Potable water dispenser  
[NASA-CASE-MFS-21115-1] c05 N74-12779
- Metering gun for dispensing precisely measured charges of fluid  
[NASA-CASE-MFS-21163-1] c05 N74-17853
- POTASSIUM SILICATES**  
Fireproof potassium silicate coating composition, insoluble in water after application  
[NASA-CASE-GSC-10072] c18 N71-14014
- POTENTIOMETERS (INSTRUMENTS)**  
Two axis flight controller with potentiometer control shafts directly coupled to rotatable ball members  
[NASA-CASE-XFR-04104] c03 N70-42073
- Device for controlling rotary potentiometer mounted on aircraft steering wheel or aileron control  
[NASA-CASE-XAC-10019] c15 N71-23809
- Mechanical function generators with potentiometer as sensing element  
[NASA-CASE-XAC-00001] c15 N71-28952
- POTTING COMPOUNDS**  
Removable potting compound for instrument shock protection  
[NASA-CASE-XLA-00482] c15 N70-36409

- Flexible, repairable, portable composition for encapsulating electric connectors  
[NASA-CASE-XGS-05180] c18 N71-25881
- Thermally conductive polymer for potting electrical components  
[NASA-CASE-GSC-11304-1] c06 N72-21105
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- Freeze casting of metal ceramic and refractory compound powders into plastic slips  
[NASA-CASE-XLE-00106] c15 N71-16076
- Production method for manufacturing porous tungsten bodies from tungsten powder particles  
[NASA-CASE-INP-04339] c17 N71-29137
- Dry electrode manufacture, using silver powder with cement  
[NASA-CASE-FRC-10029-2] c05 N72-25121
- Grinding mixtures of powdered metals and inert fillers for conversion to halide  
[NASA-CASE-LEW-10450-1] c15 N72-25448
- Superalloys from prealloyed powders at high temperatures  
[NASA-CASE-LEW-10805-1] c15 N73-13465
- Method of heat treating a formed powder product material  
[NASA-CASE-LEW-10805-3] c17 N74-10521
- Method of forming articles of manufacture from superalloy powders  
[NASA-CASE-LEW-10805-2] c15 N74-13179
- Cermet composition and method of fabrication --- heat resistant alloys and powders  
[NASA-CASE-NPO-13120-1] c27 N76-15311
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- Nonequilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c73 N75-22108
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- Characteristics of high power, low distortion, alternating current power amplifier  
[NASA-CASE-LAR-10218-1] c09 N70-34559
- Power supply with automatic power factor conversion system  
[NASA-CASE-XMS-02159] c10 N71-22961
- Solid state broadband stable power amplifier  
[NASA-CASE-XNP-10854] c10 N71-26331
- High efficiency transformerless amplitude modulator coupled to RF power amplifier  
[NASA-CASE-GSC-10668-1] c07 N71-28430
- Isolated output system for a class D switching-mode amplifier  
[NASA-CASE-MFS-21616-1] c33 N75-30429
- POWER EFFICIENCY**
- Low power drain transistor feedback circuit  
[NASA-CASE-XGS-04999] c09 N69-24317
- Excitation and detection circuitry for flux responsive magnetic head  
[NASA-CASE-XNP-04183] c09 N69-24329
- Increasing available power per unit area in ion rocket engine by increasing beam density  
[NASA-CASE-XLE-00519] c28 N70-41576
- Absorbing gas reactivity control system for minimizing power distribution and perturbation in nuclear reactors  
[NASA-CASE-XLE-04599] c22 N72-20597
- Remote platform power conserving system  
[NASA-CASE-GSC-11182-1] c15 N75-13007
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- Serrodyne traveling wave tube reentrant amplifier for synchronous communication satellites operating at microwave frequencies  
[NASA-CASE-XGS-01022] c07 N71-16088
- Switching circuit for control of cathode ray tube beam with fast rise time for output signal  
[NASA-CASE-KSC-10647-1] c10 N72-31273
- POWER LIMITERS**
- Monostable multivibrator for conserving power in spacecraft systems  
[NASA-CASE-GSC-10082-1] c10 N72-20221
- POWER LINES**
- Patent data on terminal insert connector for flat electric cables  
[NASA-CASE-XMP-00324] c09 N70-34596
- Motor run-up system --- power lines  
[NASA-CASE-NPO-13374-1] c33 N75-19524
- POWER SERIES**
- Describing circuit for obtaining sum of squares of numbers  
[NASA-CASE-XGS-04765] c08 N71-18693
- Phase modulator  
[NASA-CASE-LAR-11607-1] c32 N76-10356
- POWER SPECTRA**
- Method and apparatus for high resolution power spectrum analysis  
[NASA-CASE-NPO-10748] c08 N72-20177
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- Tape recorder designed for low power consumption and resistance to operational failure under high stress conditions  
[NASA-CASE-XGS-08259] c14 N71-23698
- Current dependent variable inductance for input filter chokes of ac or dc power supplies  
[NASA-CASE-ERC-10139] c09 N72-17154
- Performance of ac power supply developed for CO2 laser system  
[NASA-CASE-GSC-11222-1] c16 N73-32391
- High voltage distributor  
[NASA-CASE-GSC-11849-1] c33 N76-16332
- POWER SUPPLY CIRCUITS**
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[NASA-CASE-XGS-03429] c03 N69-21330
- Power control switching circuit using low voltage semiconductor controlled rectifiers for high voltage isolation  
[NASA-CASE-XNP-02713] c10 N69-39888
- Increasing power conversion efficiency of electronic amplifiers by power supply switching  
[NASA-CASE-XMS-00945] c09 N71-10798
- Electric power system utilizing thermionic plasma diodes in parallel and heat pipes as cathodes  
[NASA-CASE-XMP-05843] c03 N71-11055
- Pulsed energy power system for application of combustible gases to turbine controlling ac voltage generator  
[NASA-CASE-MSC-13112] c03 N71-11057
- Data processor having multiple sections activated at different times by selective power coupling to sections  
[NASA-CASE-XGS-04767] c08 N71-12494
- Microwave power receiving antenna solving heat dissipation problems by construction of elements as heat pipe devices  
[NASA-CASE-MFS-20333] c09 N71-13486
- Design, development, and operating principles of power supply with starting circuit which is independent of voltage regulator  
[NASA-CASE-XMS-01991] c09 N71-21449
- Power supply with automatic power factor conversion system  
[NASA-CASE-XMS-02159] c10 N71-22961
- Electric circuit for reversing direction of current flow  
[NASA-CASE-XNP-00952] c10 N71-23271
- Power supply with overload protection for series stage transistor  
[NASA-CASE-XMS-00913] c10 N71-23543
- Automatic power supply circuit design for driving inductive loads and minimizing power consumption including solenoid example  
[NASA-CASE-NPO-10716] c09 N71-24892
- Unsaturating magnetic core transformer design with warning signal for electrical power processing equipment  
[NASA-CASE-ERC-10125] c09 N71-24893
- Device for monitoring voltage by generating signal when voltages drop below predetermined value  
[NASA-CASE-KSC-10020] c10 N71-27338
- Power point tracker for maintaining optimal output voltage of power source  
[NASA-CASE-GSC-10376-1] c14 N71-27407
- Microwave power divider for providing variable output power to output waveguide in fixed waveguide system  
[NASA-CASE-NPO-11031] c07 N71-33606
- Circuit for monitoring power supply by ripple current indication  
[NASA-CASE-KSC-10162] c09 N72-11225
- Dc to ac to dc converter with transistor driven synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c09 N72-25253
- LC-oscillator with automatic stabilized amplitude via bias current control --- power supply circuit for transducers  
[NASA-CASE-MFS-21698-1] c09 N74-26732
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- Control for nuclear thermionic power source ---  
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vehicles by using rate gyroscope and angular  
accelerometer  
[NASA-CASE-XLA-01989] c21 N70-34295
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[NASA-CASE-LEW-10906-1] c06 N74-30502
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[NASA-CASE-MFS-14772] c15 N71-17692  
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constricting overlapping ends  
[NASA-CASE-XMF-05114-2] c15 N71-26148
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frictionless supported attitude-controlled  
test platforms  
[NASA-CASE-LAR-10774] c10 N71-13545
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tests of spacecraft antennas  
[NASA-CASE-XKS-09348] c09 N71-13521  
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[NASA-CASE-XKS-08012-2] c31 N71-15566
- PREPOLYMERS**  
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foams produced from prepolymers and materials  
[NASA-CASE-NPO-10596] c06 N71-25929
- PRESSURE**  
Strain gage mounting assembly  
[NASA-CASE-NPO-13170-1] c35 N76-14430
- PRESSURE CHAMBERS**  
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impulse wind tunnel  
[NASA-CASE-XMF-00411] c11 N70-36913  
Whole body measurement systems --- for  
weightlessness simulation  
[NASA-CASE-MSC-13972-1] c05 N74-10975
- PRESSURE DISTRIBUTION**  
Piston device for producing known constant  
positive pressure within lungs by using  
thoracic muscles  
[NASA-CASE-XMS-01615] c05 N70-41329  
Preventing pressure buildup in electrochemical  
cells by reacting palladium oxide with evolved  
hydrogen  
[NASA-CASE-XGS-01419] c03 N70-41864
- PRESSURE DROP**  
Leak detector  
[NASA-CASE-MFS-21761-1] c35 N75-15931
- PRESSURE EFFECTS**  
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utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c09 N74-17927  
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tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c31 N75-13111  
Internally supported flexible duct joint ---  
device for conducting fluids in high pressure  
systems  
[NASA-CASE-MFS-19193-1] c37 N75-19686
- PRESSURE GAGES**  
Differential pressure cell insensitive to  
changes in ambient temperature and extreme  
overload  
[NASA-CASE-XAC-00042] c14 N70-34816  
Blood pressure measuring system for separately  
recording dc and ac pressure signals of  
Korotkoff sounds  
[NASA-CASE-XMS-06061] c05 N71-23317  
Control system for pressure balance device used  
in calibrating pressure gages  
[NASA-CASE-XMF-04134] c14 N71-23755  
Improved McLeod gage for pressure measurement  
[NASA-CASE-XAC-04458] c14 N71-24232  
Ultrahigh vacuum gauge with two collector  
electrodes  
[NASA-CASE-LAR-02743] c14 N73-32324
- PRESSURE GRADIENTS**  
Positive displacement flowmeter for measuring  
extremely low flows of fluid with self  
calibrating features  
[NASA-CASE-XMF-02822] c14 N70-41994
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[NASA-CASE-LAR-11645-1] c02 N74-26456
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Design and development of inertia diaphragm  
pressure transducer  
[NASA-CASE-XAC-02981] c14 N71-21072  
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per square inch  
[NASA-CASE-XMF-01974] c14 N71-22752  
Improved McLeod gage for pressure measurement  
[NASA-CASE-XAC-04458] c14 N71-24232  
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[NASA-CASE-XER-11203] c14 N71-28994  
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pressure and temperature sensor operating  
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[NASA-CASE-LEW-10281-1] c14 N72-17327  
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[NASA-CASE-XGS-07752] c14 N73-30390  
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gas density level in high vacuum range  
[NASA-CASE-LAR-10000] c14 N73-30394  
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[NASA-CASE-LAR-10812-1] c11 N74-17955
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rates at difference pressure levels  
[NASA-CASE-XMS-05894-1] c15 N69-21924  
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manifold interconnecting each cell  
[NASA-CASE-XNP-03378] c03 N71-11051
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fluid source, adapted to maintain constant  
downstream pressure  
[NASA-CASE-XNP-00450] c15 N70-38603  
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[NASA-CASE-XMS-01115] c05 N70-39922  
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[NASA-CASE-XNP-00710] c15 N71-10778  
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[NASA-CASE-XLA-05332] c05 N71-11194  
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[NASA-CASE-XMS-09632-1] c05 N71-11203  
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[NASA-CASE-XNP-01020] c03 N71-12260  
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number of lightweight movable elements  
[NASA-CASE-NPO-10175] c14 N71-18625  
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testing and experimentation  
[NASA-CASE-MFS-20332] c05 N72-20097  
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[NASA-CASE-MFS-20332-2] c05 N73-25125  
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[NASA-CASE-XLA-00481] c14 N70-36824  
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[NASA-CASE-XLA-00128] c15 N70-37925  
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[NASA-CASE-XAC-02877] c14 N70-41681  
Design and development of inertia diaphragm  
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[NASA-CASE-XAC-02981] c14 N71-21072  
Design and development of pressure sensor for  
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[NASA-CASE-XMF-01974] c14 N71-22752  
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[NASA-CASE-ERC-10087] c14 N71-27334
- Method for making pressurized meteoroid penetration detector panels  
[NASA-CASE-XLA-08916] c15 N71-29018
- Design, development, and characteristics of pressure and temperature sensor operating immersed in fluid flow  
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[NASA-CASE-NPO-10832] c14 N72-21405
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[NASA-CASE-LAR-10137-1] c09 N72-22204
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[NASA-CASE-MPS-14216] c14 N73-13418
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[NASA-CASE-MPS-21761-1] c35 N75-15931
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- [NASA-CASE-XLE-08917] c15 N71-15597
- Production of barium fluoride-calcium fluoride composite lubricant for bearings or seals
- [NASA-CASE-XLE-08511-2] c18 N71-16105
- Fabrication of sintered impurity semiconductor brushes for electrical energy transfer
- [NASA-CASE-XMP-01016] c26 N71-17818
- Technique for making foldable, inflatable, plastic honeycomb core panels for use in building and bridge structures, light and radio wave reflectors, and spacecraft
- [NASA-CASE-XLA-03492] c15 N71-22713
- Multilayer porous refractory metal ionizer design with thick, porous, large-grain substrates and thin, porous micron-grain substrates
- [NASA-CASE-XNP-04338] c17 N71-23046
- Permanently magnetized ion engine casing construction for use in spacecraft propulsion systems
- [NASA-CASE-XNP-06942] c28 N71-23293
- Dry electrode design with wire sandwiched between two flexible conductive discs for monitoring physiological responses
- [NASA-CASE-FRC-10029] c09 N71-24618
- Production method of star tracking reticles for transmitting in visible and near ultraviolet regions
- [NASA-CASE-GSC-11188-1] c14 N73-32320
- Process for making sheets with parallel pores of uniform size
- [NASA-CASE-GSC-10984-1] c37 N75-26371
- PROJECTILES**
- Self-obturator gas-operated launcher for launching projectiles in decontaminated medium
- [NASA-CASE-NPO-11013] c11 N72-22247
- Two stage light gas-plasma projectile accelerator
- [NASA-CASE-MFS-22287-1] c75 N76-14931
- PROJECTION**
- Projection system for display of parallax and perspective
- [NASA-CASE-MFS-23194-1] c74 N76-13909
- PROJECTIVE GEOMETRY**
- Projection system for display of parallax and perspective
- [NASA-CASE-MFS-23194-1] c74 N76-13909
- PROJECTORS**
- Optical projector system for establishing optimum arrangement of instrument displays in aircraft, spacecraft, other vehicles, and industrial instrument consoles
- [NASA-CASE-XNP-03853] c23 N71-21882
- PROPAGATION MODES**
- Dual waveguide mode source for controlling amplitudes of two modes
- [NASA-CASE-XNP-03134] c07 N71-10676
- PROPELLANT BINDERS**
- Chemical process for production of polyisobutylene compounds and application as solid rocket propellant binder
- [NASA-CASE-NPO-10893] c27 N73-22710
- PROPELLANT COMBUSTION**
- Spherical solid propellant rocket engine having abrupt burnout
- [NASA-CASE-XHQ-01897] c28 N70-35381
- Rocket combustion chamber stability by controlling transverse instability during propellant combustion
- [NASA-CASE-XLE-04603] c33 N71-21507
- PROPELLANT DECOMPOSITION**
- Unit for generating thrust from catalytic decomposition of hydrogen peroxide, for high altitude aircraft or spacecraft reaction control
- [NASA-CASE-XMS-00583] c28 N70-38504
- PROPELLANT GRAINS**
- Grain configuration for solid propellant rocket engines
- [NASA-CASE-XGS-03556] c27 N70-35534
- PROPELLANT TANKS**
- Liquid rocket systems for propulsion and control of spacecraft
- [NASA-CASE-XNP-00610] c28 N70-36910
- Slosh damping method for liquid rocket propellant tanks
- [NASA-CASE-XMP-00658] c12 N70-38997
- Expulsion and measuring device for determining quantity of liquid in tank under conditions of weightlessness
- [NASA-CASE-XMS-01546] c14 N70-40233
- Collapsible auxiliary tank for restarting liquid propellant rocket motors under zero gravity
- [NASA-CASE-XNP-01390] c28 N70-41275
- Liquid propellant tank design with semitoroidal bulkhead
- [NASA-CASE-XNP-01899] c31 N70-41948
- Microleak detector mounted on weld seam of propellant tank of launch vehicle
- [NASA-CASE-XNP-02307] c14 N71-10779
- Fabrication of filament wound propellant tank for cryogenic storage
- [NASA-CASE-XLE-03803-2] c15 N71-17651
- Slosh and swirl alleviator for liquid propellant tanks during transport and flight
- [NASA-CASE-XLA-05749] c15 N71-19569
- Two phase fluid pressurization system for propellant tank
- [NASA-CASE-MSC-12390] c27 N71-29155
- Space vehicle system
- [NASA-CASE-MSC-12561-1] c18 N76-17185
- PROPELLANT TRANSFER**
- Two component valve assembly for cryogenic liquid transfer regulation
- [NASA-CASE-XLE-00397] c15 N70-36492
- Apparatus for cryogenic liquid storage with heat transfer reduction and for liquid transfer at zero gravity conditions
- [NASA-CASE-XLE-00345] c15 N70-38020
- Continuous variation of propellant flow and thrust by application of liquid foam flow theory to injection orifice
- [NASA-CASE-XLE-00177] c28 N70-40367
- Method and feed system for separating and orienting liquid and vapor phases of liquid propellants in zero gravity environment
- [NASA-CASE-XLE-01182] c27 N71-15635
- Electron bombardment ion rocket engine with improved propellant introduction system
- [NASA-CASE-XLE-02066] c28 N71-15661
- Rocket combustion chamber stability by controlling transverse instability during propellant combustion
- [NASA-CASE-XLE-04603] c33 N71-21507
- Vapor-liquid separator design with vapor driven pump for separated liquid pumping for application in propellant transfer
- [NASA-CASE-XNP-04042] c15 N71-23023
- Pillar valve design for supplying liquid propellants at high pressure to space vehicles
- [NASA-CASE-XNP-01747] c15 N71-23024
- Internal labyrinth and shield structure to improve electrical isolation of propellant feed source from ion thruster
- [NASA-CASE-LEW-10210-1] c28 N71-26781
- Flexible bellows joint shielding sleeve for propellant transfer pipelines
- [NASA-CASE-XNP-01855] c15 N71-28937
- PROPELLER BLADES**
- Directed fluid stream for propeller blade loading control
- [NASA-CASE-XAC-00139] c02 N70-34856
- PROPORTIONAL CONTROL**
- Proportional controller for regulating aircraft or spacecraft motion about three axes
- [NASA-CASE-XAC-03392] c03 N70-41954
- PROPULSION SYSTEM CONFIGURATIONS**
- Electrothermal rocket engine using resistance heated heat exchanger
- [NASA-CASE-XLE-00267] c28 N70-33356
- Grain configuration for solid propellant rocket engines
- [NASA-CASE-XGS-03556] c27 N70-35534
- Shrouded composite propulsion system configuration
- [NASA-CASE-XLA-01043] c28 N71-10780
- Electrostatic microthrust propulsion system with annular slit colloid thruster
- [NASA-CASE-GSC-10709-1] c28 N71-25213
- Method and apparatus for pressurizing propellant tanks used in propulsion motor feed system
- [NASA-CASE-XNP-00650] c27 N71-28929
- PROPULSIVE EFFICIENCY**
- Method and apparatus for improving operating efficiency and reducing low speed noise for turbine aircraft engines
- [NASA-CASE-LAR-11310-1] c28 N73-31699
- PROSTHETIC DEVICES**
- Prosthetic limb with tactile sensing device
- [NASA-CASE-MPS-16570-1] c05 N73-32013

# PROTECTION

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Orthotic arm joint --- for use in mechanical arms  
[NASA-CASE-MPS-21611-1] c54 N75-12616

Actuator device for artificial leg  
[NASA-CASE-MPS-23225-1] c54 N75-32767

## PROTECTION

Camera protecting device for use in photographing rocket engine nozzles or other engine components  
[NASA-CASE-MPO-10174] c14 N71-18465

Fiber modified polyurethane foam for ballistic protection  
[NASA-CASE-ARC-10714-1] c27 N76-15310

## PROTECTIVE CLOTHING

Conditioning tanned sharkskin for use as abrasive resistant clothing  
[NASA-CASE-XMS-09691-1] c18 N71-15545

One piece human garment for use as contamination proof garment  
[NASA-CASE-MSC-12206-1] c05 N71-17599

Thermoregulating with cooling flow pipe network for humans  
[NASA-CASE-XMS-10269] c05 N71-24147

Development of improved convolute section for pressurized suits to provide high degree of mobility in response to minimum of applied torque  
[NASA-CASE-XMS-09637-1] c05 N71-24730

Voice operated receiving and transmitting system for use in protective suits  
[NASA-CASE-KSC-10164] c07 N71-33108

## PROTECTIVE COATINGS

Process permitting application of synthetic resin coating to irregular-shaped objects at ambient temperature  
[NASA-CASE-INP-06508] c18 N69-39895

Ultraviolet radiation resistant alkali-metal silicate coatings for temperature control of spacecraft  
[NASA-CASE-XGS-04119] c18 N69-39979

Application techniques for protecting materials during salt bath brazing  
[NASA-CASE-XLE-00046] c15 N70-33311

Removable potting compound for instrument shock protection  
[NASA-CASE-XLA-00482] c15 N70-36409

Passive thermal control coating on aluminum foil laminate for inflatable spacecraft surfaces  
[NASA-CASE-XLA-01291] c33 N70-36617

Using ethylene oxide in preparation of sterilized solid rocket propellants and encapsulating materials  
[NASA-CASE-XNP-01749] c27 N70-41897

Pireproof potassium silicate coating composition, insoluble in water after application  
[NASA-CASE-GSC-10072] c18 N71-14014

Development of bacteriostatic conformal coating and methods of application  
[NASA-CASE-GSC-10007] c18 N71-16046

Vapor deposited laminated nitride-silicon coating for corrosion prevention of carbonaceous surfaces  
[NASA-CASE-XLA-00284] c15 N71-16075

Flame or plasma spraying for molybdenum coating of carbon or graphite surfaces to prevent oxidative corrosion  
[NASA-CASE-XLA-00302] c15 N71-16077

Development and characteristics of protective coatings for spacecraft  
[NASA-CASE-XNP-02507] c31 N71-17679

Development of thermal insulation system for wing and control surfaces of hypersonic aircraft and reentry vehicles  
[NASA-CASE-XLA-00892] c33 N71-17897

Bismuth and lead surface coatings for gas bearings in aerospace engineering  
[NASA-CASE-XGS-02011] c15 N71-20739

Composition and production method of alkali metal silicate paint with ultraviolet reflection properties  
[NASA-CASE-XGS-04799] c18 N71-24183

Method for treating metal surfaces to prevent secondary electron transmission  
[NASA-CASE-XNP-09469] c24 N71-25555

Development of solid state polymer coating for obtaining thermal balance in spacecraft components  
[NASA-CASE-XLA-01745] c33 N71-28903

Method for coating through-holes in ceramic substrates used in fabricating miniaturized electronic circuits  
[NASA-CASE-XNP-05999] c15 N71-29032

Zinc dust formulation for abrasion resistant steel coatings  
[NASA-CASE-GSC-10361-1] c18 N72-23581

Development of process for constructing protective covers for solar cells  
[NASA-CASE-GSC-11514-1] c03 N72-24037

Resin for protecting p-n semiconductor junction surface  
[NASA-CASE-ERC-10339-1] c18 N73-30532

Nonflammable coating compositions --- for use in high oxygen environments  
[NASA-CASE-MPS-20486-2] c18 N74-17283

Preparation of dielectric coatings of variable dielectric constant by plasma polymerization  
[NASA-CASE-ARC-10892-1] c27 N75-26136

Abrasion resistant coatings for plastic surfaces  
[NASA-CASE-ARC-10915-1] c27 N76-13292

Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c44 N76-14613

Fused silicide coatings containing discrete particles for protecting niobium alloys --- used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c27 N76-16229

## PROTECTORS

Load cell protection device using spring-loaded breakaway mechanism  
[NASA-CASE-XMS-06782] c32 N71-15974

Payload soft landing system using stowable gas bag  
[NASA-CASE-XLA-09881] c31 N71-16085

## PROTEINS

Protein sterilization of firefly luciferase without denaturation  
[NASA-CASE-GSC-10225-1] c06 N73-27086

## PROTON FLUX DENSITY

Plane detector operable in presence of proton radiation  
[NASA-CASE-MPS-21577-1] c03 N74-29410

## PSEUDONOISE

System designed to reduce time required for obtaining synchronization in data communication with spacecraft utilizing pseudonoise codes  
[NASA-CASE-MPO-10214] c10 N71-26577

Linear shift register with feedback logic for generating pseudonoise linear recurring binary sequences  
[NASA-CASE-MPO-11406] c08 N73-12175

Multicarrier communications system for transmitting modulated signals from single transmitter  
[NASA-CASE-MPO-11548] c07 N73-26118

Pseudo-noise test set for communication system evaluation --- test signals  
[NASA-CASE-MPS-22671-1] c35 N75-21582

Pseudo noise code and data transmission method and apparatus  
[NASA-CASE-GSC-12017-1] c32 N76-16302

## PULLEYS

Apparatus for measuring load on cable under static or dynamic conditions comprising pulleys pivoting structure against restraint of tension strap  
[NASA-CASE-XMS-04545] c15 N71-22878

Tensile strength testing device having pulley guides for exerting multiple forces on test specimen  
[NASA-CASE-XNP-05634] c15 N71-24834

## PULMONARY CIRCULATION

Pulmonary resuscitation method and apparatus with adjustable pressure regulator  
[NASA-CASE-XMS-01115] c05 N70-39922

## PULMONARY FUNCTIONS

Piston device for producing known constant positive pressure within lungs by using thoracic muscles  
[NASA-CASE-XMS-01615] c05 N70-41329

## PULSE AMPLITUDE

Monitoring system for signal amplitude ranges over predetermined time interval  
[NASA-CASE-XMS-04061-1] c09 N69-39885

Analog to digital converter for converting pulses to frequencies  
[NASA-CASE-XLA-00670] c08 N71-12501



- Electrical testing apparatus for detecting amplitude and width of transient pulse  
[NASA-CASE-XMP-06519] c09 N71-12519
- Analog to digital converter circuit for pulse height analysis  
[NASA-CASE-XNP-00477] c08 N73-28045
- Speech analyzer --- which provides information regarding amplitude, frequency, and phase of a speech waveform  
[NASA-CASE-GSC-11898-1] c32 N75-22563
- PULSE AMPLITUDE MODULATION**
- Voltage controlled oscillators and pulse amplitude modulation for signal ratio system  
[NASA-CASE-XMP-04367] c09 N71-23545
- PULSE CODE MODULATION**
- Adaptive compression signal processor for PCM communication systems  
[NASA-CASE-XLA-03076] c07 N71-11266
- Bipolar phase detector and corrector for split phase PCM data signals  
[NASA-CASE-XGS-01590] c07 N71-12392
- System for recording and reproducing PCM data from data stored on magnetic tape  
[NASA-CASE-XGS-01021] c08 N71-21042
- Frequency shift keying apparatus for use with pulse code modulation data transmission system  
[NASA-CASE-XGS-01537] c07 N71-23405
- Data reduction and transmission system for TV PCM data  
[NASA-CASE-NPO-11243] c07 N72-20154
- Pulse code modulated data from frequency multiplex communications by digital phase shift or carrier  
[NASA-CASE-NPO-11338] c08 N72-25208
- Bit synchronization of PCM communications signal, without separate synchronization channel by digital correlation  
[NASA-CASE-NPO-11302-1] c07 N73-13149
- Method and apparatus for a single channel digital communications system --- synchronization of received PCM signal by digital correlation with reference signal  
[NASA-CASE-NPO-11302-2] c07 N74-10132
- Multifunction audio digitizer --- producing direct delta and pulse code modulation  
[NASA-CASE-MSC-13855-1] c07 N74-17885
- Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12462-1] c07 N74-20809
- Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12494-1] c07 N74-20810
- Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c32 N75-19480
- Digital transmitter for data bus communications system  
[NASA-CASE-MSC-14558-1] c32 N75-21486
- Compact bi-phase pulse coded modulation decoder  
[NASA-CASE-KSC-10834-1] c33 N76-14371
- Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MSC-14557-1] c32 N76-16249
- PULSE COMMUNICATION**
- Phase shift data transmission system with pseudo-noise synchronization code modulated with digital data into single channel for spacecraft communication  
[NASA-CASE-XNP-00911] c08 N70-41961
- Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c32 N75-19480
- PULSE DURATION**
- Frequency to analog converters with unipolar field effect transistor for determining potential charge by pulse duration of input signal  
[NASA-CASE-XNP-07040] c08 N71-12500
- Electrical testing apparatus for detecting amplitude and width of transient pulse  
[NASA-CASE-XMP-06519] c09 N71-12519
- Design and development of variable pulse width multiplier  
[NASA-CASE-XLA-02850] c09 N71-20447
- Device for voltage conversion using controlled pulse widths and arrangements to generate ac output voltage  
[NASA-CASE-MPS-10068] c10 N71-25139
- One shot multivibrator circuit for producing long duration output pulses  
[NASA-CASE-ARC-10137-1] c09 N71-28468
- Pulse stretcher for narrow pulses  
[NASA-CASE-MSC-14130-1] c10 N74-32711
- PULSE DURATION MODULATION**
- Pulse duration modulation multiplier system  
[NASA-CASE-XER-09213] c07 N71-12390
- Variable duration pulse integrator design for integrating pulse duration modulated pulses with elimination of ripple content  
[NASA-CASE-XLA-01219] c10 N71-23084
- Electric motor control system with pulse width modulation for providing automatic null seeking servo  
[NASA-CASE-XMP-05195] c10 N71-24861
- Pulse duration control device for driving slow response time loads in selected sequence including switching and delay circuits and magnetic storage  
[NASA-CASE-XGS-04224] c10 N71-26418
- Monostable multivibrator for producing output pulse widths with positive feedback NOR gates  
[NASA-CASE-MSC-13492-1] c10 N71-28860
- Load current sensor for series pulse width modulated power supply  
[NASA-CASE-GSC-10656-1] c09 N72-25249
- PULSE FREQUENCY MODULATION**
- Electric current measuring apparatus design including saturable core transformer and energy storage device to avoid magnetizing current errors from transformer output winding  
[NASA-CASE-XGS-02439] c14 N71-19431
- Digitally controlled frequency synthesizer for pulse frequency modulation telemetry systems  
[NASA-CASE-XGS-02317] c09 N71-23525
- Noninterruptable digital counter circuit design with display device for pulse frequency modulation  
[NASA-CASE-XNP-09759] c08 N71-24891
- Threshold extension device for improving operating performance of frequency modulation demodulators by eliminating click-type noise impulses  
[NASA-CASE-MSC-12165-1] c07 N71-33696
- PULSE GENERATORS**
- High voltage pulse generator for testing flash and ignition limits of nonmetallic materials in controlled atmospheres  
[NASA-CASE-MSC-12178-1] c09 N71-13518
- Interrogator and current driver circuit for combination with transistor flip-flop circuit  
[NASA-CASE-XGS-03058] c10 N71-19547
- Electric circuit for producing high current pulse having fast rise and fall time  
[NASA-CASE-XMS-04919] c09 N71-23270
- Pulse generator for synchronizing or resetting electronic signals without requiring separate external source  
[NASA-CASE-XGS-03632] c09 N71-23311
- Development and characteristics of resettable monostable pulse generator with charge rundown-timing circuit  
[NASA-CASE-GSC-11139] c09 N71-27016
- Pulse generating circuit for operation at very high duty cycles and repetition rates  
[NASA-CASE-XNP-00745] c10 N71-28960
- Pulse coupling circuit with switch between generator and winding  
[NASA-CASE-LEW-10433-1] c09 N72-22197
- Method and apparatus for nondestructive testing --- using high frequency arc discharges  
[NASA-CASE-MPS-21233-1] c23 N74-15395
- Random pulse generator  
[NASA-CASE-MSC-14131-1] c33 N75-19515
- PULSE RATE**
- Circuit for measuring wide range of pulse rates by utilizing high capacity counter  
[NASA-CASE-XNP-06234] c10 N71-27137
- Peak holding circuit for extremely narrow pulses  
[NASA-CASE-MSC-14129-1] c33 N75-18479
- PULSED LASERS**
- Repetitively pulsed wavelength selective carbon dioxide laser  
[NASA-CASE-ERC-10178] c16 N71-24832
- Dually mode locked Nd:YAG laser  
[NASA-CASE-GSC-11746-1] c36 N75-19654
- PULSED RADIATION**
- Development and characteristics of cyclically operable, optical shutter for use as focal plane shutter for transmitting single radiation pulses  
[NASA-CASE-NPO-10758] c14 N73-14427

## PULSES

## PULSES

High resolution radar transmitting system for transmitting optical pulses to targets  
[NASA-CASE-NPO-11426] c07 N73-26119

## PUMP SEALS

Flexible barrier membrane comprising porous substrate and incorporating liquid gallium or indium metal used as sealant barriers for spacecraft walls and pumping liquid propellants  
[NASA-CASE-XNP-08881] c17 N71-28747

Spiral groove seal --- for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c15 N74-10474

## PUMPS

Piezoelectric pump for supplying fluid at high frequencies to gyroscope fluid suspension system  
[NASA-CASE-XNP-05429] c26 N71-21824

Vapor-liquid separator design with vapor driven pump for separated liquid pumping for application in propellant transfer  
[NASA-CASE-XNP-04042] c15 N71-23023

Automatically reciprocating, high pressure pump for use in spacecraft cryogenic propellants  
[NASA-CASE-XNP-04731] c15 N71-24042

Development and characteristics of variable displacement fluid pump for transforming hydraulic pressures  
[NASA-CASE-MPS-20830] c15 N71-30028

Pumping and metering dual piston system and monitor for reaction chamber constituents  
[NASA-CASE-GSC-10218-1] c15 N72-21465

Magnetocaloric pump --- for cryogenic fluids  
[NASA-CASE-LEW-11672-1] c15 N74-27904

Solar powered pump  
[NASA-CASE-NPO-13567-1] c37 N75-22746

## PUNCHED CARDS

Describing device for flagging punched business cards  
[NASA-CASE-XLA-02705] c08 N71-15908

Handling tool for printed circuit cards  
[NASA-CASE-MPS-20453] c15 N71-29133

## PUNCHES

Punch and die device for forming convolution series in thin gage metal hemispheres  
[NASA-CASE-XNP-05297] c15 N71-23811

## PURGING

Carbon dioxide purge systems to prevent condensation in spaces between cryogenic fuel tanks and hypersonic vehicle skin  
[NASA-CASE-XLA-01967] c31 N70-42015

Developing high pressure gas purification and filtration system for use in test operations of space vehicles  
[NASA-CASE-MPS-12806] c14 N71-17588

Fluid transferring system design for purging toxic, corrosive, or noxious fluids and fumes from materials handling equipment for cleansing and accident prevention  
[NASA-CASE-XMS-01905] c12 N71-21089

Device for back purging thrust engines  
[NASA-CASE-XMS-04826] c28 N71-28849

## PURIFICATION

Apparatus and method capable of receiving large quantity of high pressure helium, removing impurities, and discharging at received pressure  
[NASA-CASE-XNP-06888] c15 N71-24044

Purification apparatus for vaporization and fractional distillation of liquids  
[NASA-CASE-XNP-08124] c15 N71-27184

Water purification process  
[NASA-CASE-ARC-10643-2] c51 N75-13506

## PURITY

Synthesis of high purity dianilinosilanes  
[NASA-CASE-XNP-06409] c06 N71-23230

## PUSH-PULL AMPLIFIERS

Frequency modulated oscillator  
[NASA-CASE-MPS-23181-1] c33 N75-21518

## PYROLYSIS

Pyrolysis system and process --- recovering energy from solid wastes containing hydrocarbons  
[NASA-CASE-MSC-12669-1] c44 N76-16621

## PYROLYTIC GRAPHITE

Multislit film cooled pyrolytic graphite rocket nozzle  
[NASA-CASE-XNP-04389] c28 N71-20942

## PYROLYTIC MATERIALS

Design, development, and characteristics of ablation structures  
[NASA-CASE-XMS-01816] c33 N71-15623

## SUBJECT INDEX

## PYROMETERS

Sensor device with switches for measuring surface recession of charring and noncharring ablators  
[NASA-CASE-XLA-01781] c14 N69-39975

## PYROTECHNICS

Energy source with tantalum capacitors in parallel and miniature silver oxide button cells for initiating pyrotechnic devices on spacecraft and rocket vehicles  
[NASA-CASE-LAR-10367-1] c03 N70-26817

Development and characteristics of squib actuated explosive disconnect for spacecraft release from launch vehicle  
[NASA-CASE-NPO-11330] c33 N73-26958

## Q

## Q SWITCHED LASERS

Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c33 N74-27425

Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c16 N74-34010

## Q VALUES

Design of active RC network capable of operating at high Q values with reduced sensitivity to gain amplification and number of passive components  
[NASA-CASE-ARC-10042-2] c10 N72-11256

## QUADRATURES

Automatic quadrature control and measuring system --- using optical coupling circuitry  
[NASA-CASE-MPS-21660-1] c14 N74-21017

## QUALITATIVE ANALYSIS

Ultraviolet chromatographic detector for quantitative and qualitative analysis of compounds  
[NASA-CASE-HQN-10756-1] c14 N72-25428

Analysis of volatile organic compounds --- quantitative and qualitative analysis of trace amounts in gas samples  
[NASA-CASE-MSC-14428-1] c06 N74-19776

## QUANTITATIVE ANALYSIS

Mixed liquid and vapor phase analyzer design with thermocouples for relative heat transfer measurement  
[NASA-CASE-NPO-10691] c14 N71-26199

Quantitative liquid measurements in container by resonant frequencies  
[NASA-CASE-XNP-02500] c18 N71-27397

Ultraviolet chromatographic detector for quantitative and qualitative analysis of compounds  
[NASA-CASE-HQN-10756-1] c14 N72-25428

Nondispersive gas analysis using radiation detection for quantitative analysis  
[NASA-CASE-ARC-10308-1] c06 N72-31141

Analysis of volatile organic compounds --- quantitative and qualitative analysis of trace amounts in gas samples  
[NASA-CASE-MSC-14428-1] c06 N74-19776

## QUANTUM THEORY

The 3-5 photocathode with nitrogen doping for increased quantum efficiency --- using acceptor materials  
[NASA-CASE-NPO-12134-1] c33 N75-16745

## QUARTZ

Ultraviolet filter of thorium fluoride and cryolite on quartz base  
[NASA-CASE-XNP-02340] c23 N69-24332

## QUARTZ LAMPS

High intensity heat and light unit containing quartz lamp elements protectively positioned to withstand severe environmental stress  
[NASA-CASE-XLA-00141] c09 N70-33312

Light shield and cooling apparatus --- high intensity ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c15 N74-23066

## R

## RACKS (FRAMES)

Design and development of test stand system for supporting test items in vacuum chamber  
[NASA-CASE-MPS-21362] c11 N73-20267

Thrust-isolating mounting --- characteristics of support for loads mounted in spacecraft  
[NASA-CASE-MPS-21680-1] c32 N74-27397

## SUBJECT INDEX

## RADIATION DETECTORS

## RADAR ANTENNAS

- Interferometric tuning acquisition and tracking radar antenna system  
[NASA-CASE-XMS-09610] c07 N71-24625
- Variable beamwidth antenna --- with multiple beam, variable feed system  
[NASA-CASE-GSC-11862-1] c32 N76-18295
- Highly-efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c32 N76-21365

## RADAR EQUIPMENT

- Spacecraft transponder and ground station radar system for mapping planetary surfaces  
[NASA-CASE-NPO-11001] c07 N72-21118

## RADAR IMAGERY

- Charge-coupled device data processor for an airborne imaging radar system  
[NASA-CASE-NPO-13587-1] c32 N75-26206
- Method of locating persons in distress --- by using radar imagery from radar reflectors  
[NASA-CASE-LAR-11390-1] c32 N76-18315

## RADAR RANGE

- Radar signal receiver arrangement for extending range and increasing signal to noise ratio  
[NASA-CASE-XNP-00748] c07 N70-36911

## RADAR RECEIVERS

- Polarization diversity monopulse tracking receiver design without radio frequency switches  
[NASA-CASE-XGS-03501] c09 N71-20864

## RADAR RECEPTION

- Radar signal receiver arrangement for extending range and increasing signal to noise ratio  
[NASA-CASE-XNP-00748] c07 N70-36911

## RADAR REFLECTORS

- Inflatable radar reflector unit - lightweight, highly reflective to electromagnetic radiation, and adaptable for erection and deployment with minimum effort and time  
[NASA-CASE-XMS-00893] c07 N70-40063
- Method of locating persons in distress --- by using radar imagery from radar reflectors  
[NASA-CASE-LAR-11390-1] c32 N76-18315

## RADAR TRACKING

- Tracking antenna system with array for synchronous satellite or ground based radar  
[NASA-CASE-GSC-10553-1] c07 N71-19854
- Polarization diversity monopulse tracking receiver design without radio frequency switches  
[NASA-CASE-XGS-03501] c09 N71-20864
- Monopulse tracking system with antenna array of three radiators for deriving azimuth and elevation indications  
[NASA-CASE-XGS-01155] c10 N71-21483
- Plastic sphere for radar tracking and calibration  
[NASA-CASE-XLA-11154] c07 N72-21117

## RADAR TRANSMITTERS

- High resolution radar transmitting system for transmitting optical pulses to targets  
[NASA-CASE-NPO-11426] c07 N73-26119

## RADIAL FLOW

- Radial heat flux transformer for use in heating and cooling processes  
[NASA-CASE-NPO-10828] c33 N72-17948
- Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c37 N76-18459

## RADIANCE

- Method and apparatus for measuring shock layer radiation distribution about high velocity objects  
[NASA-CASE-YAC-02970] c14 N69-39896

## RADIANT COOLING

- Direct radiation cooling of linear beam collector tubes  
[NASA-CASE-XNP-09227] c15 N69-24319
- High thermal emittance black surface coatings and process for applying to metal and metal alloy surfaces used in radiative cooling of spacecraft  
[NASA-CASE-XLA-06199] c15 N71-24875

## RADIANT FLUX DENSITY

- High intensity radiant energy pulse source for calibrating heat transfer gages with thermoluminescent shutter activation  
[NASA-CASE-ARC-10178-1] c09 N72-17152

## RADIANT HEATING

- High intensity heat and light unit containing quartz lamp elements protectively positioned to withstand severe environmental stress

- [NASA-CASE-XLA-00141] c09 N70-33312
- High temperature source of thermal radiation  
[NASA-CASE-XLB-00490] c33 N70-34545
- Refractory filament series circuitry for radiant heater  
[NASA-CASE-XLE-00387] c33 N70-34812
- Unfired ceramic insulation for protection from radiant heating environments  
[NASA-CASE-MPS-14253] c33 N71-24858
- Solar energy trap  
[NASA-CASE-MPS-22744-1] c44 N75-10586

## RADIATION

- Development of radiant energy sensor to detect the radiant energy wavelength bands from portions of radiating body  
[NASA-CASE-ERC-10174] c14 N72-25409
- Development of thermopile with sensor surface to receive radiant energy and to provide measurement of energy quantity  
[NASA-CASE-NPO-11493] c14 N73-12447
- Integrated structure vacuum tube  
[NASA-CASE-ARC-10445-1] c09 N74-29577
- Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-2] c60 N76-18803

## RADIATION ABSORPTION

- NDIR gas analyzer based on absorption modulation ratios for known and unknown samples  
[NASA-CASE-ARC-10802-1] c35 N75-30502

## RADIATION COUNTERS

- Particle detector for indicating incidence and energy of minute space particles  
[NASA-CASE-XLA-00135] c14 N70-33322
- Sensing method and device for determining orientation of space vehicle or satellite by using particle traps  
[NASA-CASE-XGS-00466] c21 N70-34297
- Solid state device for mapping flux and power in nuclear reactor cores  
[NASA-CASE-XLE-00301] c14 N70-36808
- Particle beam power density detection and measurement apparatus  
[NASA-CASE-XLE-00243] c14 N70-38602
- Automatic baseline stabilization for ionization detector used in gas chromatograph  
[NASA-CASE-XNP-03128] c10 N70-41991
- Method of forming thin window drifted silicon charged particle detector  
[NASA-CASE-XLE-00808] c24 N71-10560
- Development of dosimeter for measuring absorbed dose of high energy ionizing radiation  
[NASA-CASE-XLA-03645] c14 N71-20430
- Apparatus for detecting particle emission lower than noise level of multiplier tube  
[NASA-CASE-XLA-07813] c14 N72-17328
- Radiation or charged particle detector and amplifier  
[NASA-CASE-NPO-12128-1] c14 N73-32317
- Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c14 N74-26949

## RADIATION DAMAGE

- Addition of group 3 elements to silicon semiconductor material for increased resistance to radiation damage in solar cells  
[NASA-CASE-XLE-02798] c26 N71-23654
- Recovering efficiency of solar cells damaged by environmental radiation through thermal annealing  
[NASA-CASE-XGS-04047-2] c03 N72-11062
- Photomultiplier circuit including means for rapidly reducing the sensitivity thereof --- and protection from radiation damage  
[NASA-CASE-ARC-10593-1] c09 N74-27682

## RADIATION DETECTORS

- Radiation source and detection system for measuring amount of liquid inside tanks independently of liquid configuration  
[NASA-CASE-HSC-12280] c27 N71-16348
- Detection instrument for light emitted from ATP biochemical reaction  
[NASA-CASE-XGS-05534] c23 N71-16355
- Circuit design for determining amount of photomultiplier tube light detection utilizing variable current source and dark current signals of opposite polarity  
[NASA-CASE-XMS-03478] c14 N71-21040
- Attitude sensor with scanning mirrors for detecting orientation of space vehicle with respect to planet

# RADIATION DISTRIBUTION

# SUBJECT INDEX

[NASA-CASE-XLA-00793] c21 N71-22880  
Mosaic semiconductor radiation detector and position indicator systems engineering for low energy particles  
[NASA-CASE-XGS-03230] c14 N71-23401  
Nondispersive gas analysis using radiation detection for quantitative analysis  
[NASA-CASE-ARC-10308-1] c06 N72-31141  
Radiation source tracker comprised of sectored matrix of detectors with output voltages corresponding to irradiance levels  
[NASA-CASE-NPO-11686] c14 N73-25462  
Radiation or charged particle detector and amplifier  
[NASA-CASE-NPO-12128-1] c14 N73-32317  
Mossbauer spectrometer radiation detector  
[NASA-CASE-LAR-11155-1] c14 N74-15091  
High field CdS detector for infrared radiation  
[NASA-CASE-LAR-11027-1] c14 N74-18088  
Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c03 N74-29410  
Detector absorptivity measuring method and apparatus  
[NASA-CASE-LAR-10907-1] c35 N75-19629  
Wide angle sun sensor --- consisting of cylinder, insulation and pair of detectors  
[NASA-CASE-NPO-13327-1] c35 N75-23910  
**RADIATION DISTRIBUTION**  
Space simulator with uniform test region radiation distribution, adapted to simulate Venus solar radiations  
[NASA-CASE-XNP-00459] c11 N70-38675  
**RADIATION DOSAGE**  
Development of dosimeter for measuring absorbed dose of high energy ionizing radiation  
[NASA-CASE-XLA-03645] c14 N71-20430  
**RADIATION EFFECTS**  
Method for temperature compensating semiconductor gages by exposure to high energy radiation  
[NASA-CASE-XLA-04555-1] c14 N71-25892  
**RADIATION HARDENING**  
Radiation hardening of MOS devices by boron --- for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c24 N74-20329  
**RADIATION MEASUREMENT**  
Development of thermopile with sensor surface to receive radiant energy and to provide measurement of energy quantity  
[NASA-CASE-NPO-11493] c14 N73-12447  
**RADIATION MEASURING INSTRUMENTS**  
Rocket-borne aspect sensor consisting of radiation sensor, apertured disk, commutator, and counting circuits  
[NASA-CASE-XGS-08266] c14 N69-27432  
Infrared scanning system for maintaining spacecraft orientation with earth reference  
[NASA-CASE-XLA-00120] c21 N70-33181  
Multiple wavelength radiation measuring instrument for determining hot body or gas temperature  
[NASA-CASE-XLE-00011] c14 N70-41946  
Development of method for improving signal to noise ratio and accuracy of Wheatstone bridge type radiation measuring instrument  
[NASA-CASE-XLA-02810] c14 N71-25901  
Development of thermopile with sensor surface to receive radiant energy and to provide measurement of energy quantity  
[NASA-CASE-NPO-11493] c14 N73-12447  
Phototransistor with base collector junction diode for integration into photo sensor arrays  
[NASA-CASE-MFS-20407] c09 N73-19235  
Method and apparatus for measuring electromagnetic radiation  
[NASA-CASE-LEW-11159-1] c14 N73-28488  
Design of gamma ray spectrometer for measurement of intense radiation using Compton scattering effect  
[NASA-CASE-MFS-21441-1] c14 N73-30392  
Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c14 N74-26949  
**RADIATION PROTECTION**  
Development of method for protecting large and oddly shaped areas from radiant and convective heat  
[NASA-CASE-XNP-01310] c33 N71-28852

Cooling and radiation protection of ruby lasers using copper sulfate solution in alcohol  
[NASA-CASE-MFS-20180] c16 N72-12440  
Photomultiplier circuit including means for rapidly reducing the sensitivity thereof --- and protection from radiation damage  
[NASA-CASE-ARC-10593-1] c09 N74-27682  
**RADIATION SHIELDING**  
Encapsulated heater forming hollow body for cathode used in ion thruster  
[NASA-CASE-LEW-10814-1] c28 N70-35422  
Describing hot filament type Bayard-Alpert ionization gage with ion collector buried or removed from grid structure  
[NASA-CASE-XLA-07424] c14 N71-18482  
Sealed housing for protecting electronic equipment against electromagnetic interference  
[NASA-CASE-MSC-12168-1] c09 N71-18600  
Internal labyrinth and shield structure to improve electrical isolation of propellant feed source from ion thruster  
[NASA-CASE-LEW-10210-1] c28 N71-26781  
Light shield and cooling apparatus --- high intensity ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c15 N74-23066  
**RADIATION SOURCES**  
Sight switch using infrared source and sensor mounted beside eye  
[NASA-CASE-XMP-03934] c09 N71-22985  
Apparatus for obtaining isotropic irradiation on film emulsion from parallel radiation source  
[NASA-CASE-MFS-20095] c24 N72-11595  
Radiation source tracker comprised of sectored matrix of detectors with output voltages corresponding to irradiance levels  
[NASA-CASE-NPO-11686] c14 N73-25462  
High powered arc electrodes --- producing solar simulator radiation  
[NASA-CASE-LEW-11162-1] c09 N74-12913  
Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c33 N75-29318  
**RADIATION SPECTRA**  
Maksutov spectrograph for low light level research  
[NASA-CASE-XLA-10402] c14 N71-29041  
**RADIATION TOLERANCE**  
Ultraviolet radiation resistant alkali-metal silicate coatings for temperature control of spacecraft  
[NASA-CASE-XGS-04119] c18 N69-39979  
Doping silicon material with gadolinium to increase radiation resistance of solar cells  
[NASA-CASE-XLE-02792] c26 N71-10607  
Improving radiation resistance of silicon semiconductor junctions by doping with lithium  
[NASA-CASE-XGS-07801] c09 N71-12513  
Radiation hardening of MOS devices by boron --- for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c76 N75-25730  
**RADIATIVE HEAT TRANSFER**  
Heat flux sensor assembly with proviso for heat shield to reduce radiative transfer between sensor elements  
[NASA-CASE-XMS-05909-1] c14 N69-27459  
Capillary radiator for carrying heat transfer liquid in planetary spacecraft structures  
[NASA-CASE-XLE-03307] c33 N71-14035  
Transient heat transfer gage for measuring total radiant intensity from far ultraviolet and ionized high temperature gases  
[NASA-CASE-XNP-09802] c33 N71-15641  
Construction and method of arranging plurality of ion engines to form cluster thereby increasing efficiency and control by decreasing heat radiated to space  
[NASA-CASE-XNP-02923] c28 N71-23081  
**RADIATORS**  
Development and characteristics of natural circulation radiator for use with nuclear power plants installed in lunar space stations  
[NASA-CASE-XHQ-03673] c33 N71-29046  
**RADIO ANTENNAS**  
Low loss parasitic probe antenna for prelaunch tests of spacecraft antennas  
[NASA-CASE-XKS-09348] c09 N71-13521  
VHF/UHF parasitic probe antenna for spacecraft communication  
[NASA-CASE-XKS-09340] c07 N71-24614

## SUBJECT INDEX

## RANDOM NOISE

- Development and characteristics of extensible dipole antenna using deformable tubular metallic strip element  
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- Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c32 N76-21365
- RADIO ASTRONOMY**  
Synchronous detection system for detecting weak radio astronomical signals  
[NASA-CASE-XNP-09832] c30 N71-23723
- RADIO CONTROL**  
Radio frequency controlled solid state switch  
[NASA-CASE-ARC-10136-1] c09 N72-22202
- RADIO FREQUENCIES**  
Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c07 N69-24323  
Automatic gain control amplifier system  
[NASA-CASE-XMS-05307] c09 N69-24330  
Method and apparatus for bowing of instrument panels to improve radio frequency shielded enclosure  
[NASA-CASE-XMP-09422] c07 N71-19436  
Development of automatic frequency discriminators and control for phase lock loop providing frequency preset capabilities  
[NASA-CASE-XMP-08665] c10 N71-19467  
System generating sidereal frequency signals from signals of standard solar frequency without use of mixing operations or feedback loops  
[NASA-CASE-XGS-02610] c14 N71-23174  
Radio frequency coaxial filter to provide dc isolation and low frequency signal rejection in audio range  
[NASA-CASE-XGS-01418] c09 N71-23573  
Variable frequency nuclear magnetic resonance spectrometer providing drive signals over wide frequency range and minimizing noise effects  
[NASA-CASE-XNP-09830] c14 N71-26266  
High efficiency transformerless amplitude modulator coupled to RF power amplifier  
[NASA-CASE-GSC-10668-1] c07 N71-28430  
Technique and equipment for sputtering using apertured electrode and pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c17 N73-24569  
Radio frequency source resistance measuring instruments of varied design  
[NASA-CASE-NPO-11291-1] c14 N73-30388  
Ion and electron detector for use in an ICR spectrometer  
[NASA-CASE-NPO-13479-1] c14 N74-32890  
Multichannel logarithmic RF level detector  
[NASA-CASE-LAR-11021-1] c32 N76-14321
- RADIO FREQUENCY INTERFERENCE**  
Radio frequency noise generator having microwave slow-wave structure in gas discharge plasma  
[NASA-CASE-XER-11019] c09 N71-23598  
System for interference signal nulling by polarization adjustment  
[NASA-CASE-NPO-13140-1] c32 N75-24982
- RADIO FREQUENCY SHIELDING**  
Gunn effect microwave diodes with RF shielding  
[NASA-CASE-ERC-10119] c26 N72-21701  
Process for making RF shielded cable connector assemblies and resulting structures  
[NASA-CASE-GSC-11215-1] c09 N73-28083
- RADIO RECEIVERS**  
Radio receiver with array of independently steerable antennas for deep space communication  
[NASA-CASE-XLA-00901] c07 N71-10775  
Development of optimum pre-detection diversity combining receiving system adapted for use with amplitude modulation, phase modulation, and frequency modulation systems  
[NASA-CASE-XGS-00740] c07 N71-23098
- RADIO RELAY SYSTEMS**  
Satellite radio communication system with remote steerable antenna  
[NASA-CASE-XNP-02389] c07 N71-28900
- RADIO SIGNALS**  
Erectable, inflatable, radio signal reflecting passive communication satellite  
[NASA-CASE-XLA-00210] c30 N70-40309  
Synchronous detection system for detecting weak radio astronomical signals  
[NASA-CASE-XNP-09832] c30 N71-23723
- RADIO STARS**  
System generating sidereal frequency signals from signals of standard solar frequency without use of mixing operations or feedback loops  
[NASA-CASE-XGS-02610] c14 N71-23174
- RADIO TELEMETRY**  
Digital telemetry system apparatus to reduce tape recorder wow and flutter noise during playback  
[NASA-CASE-XGS-01812] c07 N71-23001
- RADIO TRANSMITTERS**  
Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c32 N75-26194
- RADIO WAVES**  
Gunn effect microwave diodes with RF shielding  
[NASA-CASE-ERC-10119] c26 N72-21701
- RADIOACTIVE ISOTOPEs**  
Thermally cascaded thermoelectric generator with radioisotopic heat source  
[NASA-CASE-NPO-10753] c03 N72-26031  
Protected isotope heat source --- for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c73 N75-30876
- RADIOBIOLOGY**  
Production of I-123 for use as radiopharmaceutical for low radiation exposure  
[NASA-CASE-LEW-10518-1] c24 N72-33681
- RADIOGRAPHY**  
Nondestructive radiographic tests of resistance welds  
[NASA-CASE-XNP-02588] c15 N71-18613  
Method and system for in vivo measurement of bone tissue  
[NASA-CASE-MSc-14276-1] c54 N75-21948
- RADIOLYSIS**  
Process for making anhydrous metal halides  
[NASA-CASE-LEW-11860-1] c37 N76-18458
- RADIOMETERS**  
Miniaturized radiometer for detecting low level thermal radiation  
[NASA-CASE-XLA-04556] c14 N69-27484  
Black body radiometer design with temperature sensing and cavity heat source cone winding  
[NASA-CASE-XNP-09701] c14 N71-26475  
Black body radiometer having isothermally surrounded cavity for ultraviolet, visible, and infrared radiation  
[NASA-CASE-NPO-10810] c14 N71-27323  
Thermoelectric radiometer using polymer film as capacitor  
[NASA-CASE-ARC-10138-1] c14 N72-24477  
Development of radiant energy sensor to detect the radiant energy wavelength bands from portions of radiating body  
[NASA-CASE-ERC-10174] c14 N72-25409  
Development of radiometric sensor to warn aircraft pilots of region of clear air turbulence along flight path  
[NASA-CASE-ERC-10081] c14 N72-28437  
Radiometric measuring system for solar activity and atmospheric attenuation and emission  
[NASA-CASE-ERC-10276] c14 N73-26432  
Steady state thermal radiometers  
[NASA-CASE-MPS-21108-1] c14 N74-27861
- RAIN**  
Precipitation detector and mechanism for stopping and restarting machinery at initiation and cessation of rain  
[NASA-CASE-XLA-02619] c10 N71-26334
- RAMJET ENGINES**  
Telescoping-spike supersonic nozzle for turbojet or ramjet engines  
[NASA-CASE-XLE-00005] c28 N70-39899
- RANDOM LOADS**  
Fatigue testing device applying random discrete load levels to test specimen and applicable to aircraft structures  
[NASA-CASE-XLA-02131] c32 N70-42003
- RANDOM NOISE**  
Circuits for amplitude limiting of random noise inputs  
[NASA-CASE-NPO-10169] c10 N71-24844  
Digital servo control of random sound test excitation --- in reverberant acoustic chamber  
[NASA-CASE-NPO-11623-1] c23 N74-31148

# RANGE FINDERS

# SUBJECT INDEX

Random pulse generator  
[NASA-CASE-MSC-14131-1] c33 N75-19515

**RANGE FINDERS**  
Closed loop radio communication ranging system to determine distance between moving airborne vehicle and fixed ground station  
[NASA-CASE-XNP-01501] c21 N70-41930

**RANGEFINDING**  
Equipment for testing of ground station ranging equipment, and spacecraft transponders  
[NASA-CASE-XMS-05454-1] c07 N71-12391  
Spacecraft ranging system  
[NASA-CASE-NPO-10066] c09 N71-18598  
Binary coded sequential acquisition ranging system for distance measurements  
[NASA-CASE-NPO-11194] c08 N72-25209  
Loop transponder for regenerating code of mu-type ranging system  
[NASA-CASE-NPO-11707] c07 N73-25161  
Orbital and entry tracking accessory for globes --- to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c14 N74-21015

**RARE EARTH COMPOUNDS**  
Including didymium hydrate in nickel hydroxide of positive electrode of storage batteries to increase ampere hour capacity  
[NASA-CASE-IGS-03505] c03 N71-10608

**RARE GASES**  
Inert gas metallic vapor laser  
[NASA-CASE-NPO-13449-1] c36 N75-32441

**RAREFIED GASES**  
Magnetically controlled plasma accelerator capable of ignition in low density gaseous environment  
[NASA-CASE-XLA-00327] c25 N71-29184

**RATES (PER TIME)**  
Apparatus and digital technique for coding rate data  
[NASA-CASE-LAR-10128-1] c08 N73-20217

**RC CIRCUITS**  
RC transistor circuit to indicate each pulse of pulse train and occurrence of nth pulse  
[NASA-CASE-XMP-00906] c09 N70-41655  
Device utilizing RC rate generators for continuous slow speed measurement  
[NASA-CASE-XMP-02966] c10 N71-24863  
Digital data handling circuits for pulse amplifiers  
[NASA-CASE-XNP-01068] c10 N71-28739  
Design of active RC network capable of operating at high Q values with reduced sensitivity to gain amplification and number of passive components  
[NASA-CASE-ARC-10042-2] c10 N72-11256  
Active RC filter networks and amplifiers for deep space magnetic field measurement  
[NASA-CASE-XAC-05462-2] c10 N72-17171  
RC networks with voltage amplifier, RC input circuit, and positive feedback  
[NASA-CASE-ARC-10020] c10 N72-17172  
Multiloop RC active filter network with low parameter sensitivity and low amplifier gain  
[NASA-CASE-ARC-10192] c09 N72-21245  
Temperature control system comprised of wheatstone bridge with RC circuit  
[NASA-CASE-NPO-11304] c14 N73-26430  
Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-3] c33 N75-19520

**REACTION CONTROL**  
Development of voice operated controller for controlling reaction jets of spacecraft  
[NASA-CASE-XLA-04063] c31 N71-33160

**REACTION WHEELS**  
Satellite stabilization reaction wheel scanner  
[NASA-CASE-XGS-02629] c14 N71-21082  
Gravity gradient attitude control system with gravity gradiometer and reaction wheels for artificial satellite attitude control  
[NASA-CASE-GSC-10555-1] c21 N71-27324

**REACTIVITY**  
Absorbing gas reactivity control system for minimizing power distribution and perturbation in nuclear reactors  
[NASA-CASE-XLE-04599] c22 N72-20597

**REACTOR CORES**  
Simulated fuel assembly-type flow measurement apparatus for coolant flow in reactor core  
[NASA-CASE-XLE-00724] c14 N70-34669

Solid state device for mapping flux and power in nuclear reactor cores  
[NASA-CASE-XLE-00301] c14 N70-36808  
Reactor heated in-core diodes for energy conversion  
[NASA-CASE-NPO-10542] c09 N72-27228

**REACTOR DESIGN**  
Nonequilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c73 N75-22108

**REACTOR MATERIALS**  
A zirconium modified nickel-copper alloy  
[NASA-CASE-LEW-12245-1] c26 N75-26087

**REACTOR TECHNOLOGY**  
Nuclear reactor control rod assembly with improved driving mechanism  
[NASA-CASE-XLE-00298] c22 N70-34501

**READOUT**  
Flow angle sensor and remote readout system for use with cryogenic fluids  
[NASA-CASE-XLE-04503] c14 N71-24864  
System for checking status of several double-throw switches by readout indications  
[NASA-CASE-XLA-08799] c10 N71-27272

**REAL TIME OPERATION**  
Respiratory analysis system to determine gas flow rate and frequency of respiration and expiration cycles in real time  
[NASA-CASE-MSC-13436-1] c05 N73-32015  
Real time moving scene holographic camera system  
[NASA-CASE-MFS-21087-1] c14 N74-17153  
Real time liquid crystal image converter  
[NASA-CASE-LAR-11206-1] c23 N74-30118  
Real time analysis of voiced sounds  
[NASA-CASE-NPO-13465-1] c71 N75-13593  
Real time, large volume, moving scene holographic camera system  
[NASA-CASE-MFS-22537-1] c35 N75-27328  
Carbon monoxide monitor --- using real time operation  
[NASA-CASE-MFS-22060-1] c35 N75-29380

**RECEIVERS**  
Semiconductor in resonant cavity for improving signal to noise ratio of communication receiver  
[NASA-CASE-MSC-12259-1] c07 N70-12616  
Improved phase lock loop for receiver in multichannel telemetry system with suppressed carrier  
[NASA-CASE-NPO-11593-1] c07 N73-28012  
Automatic carrier acquisition system for phase locked loop receiver  
[NASA-CASE-NPO-11628-1] c07 N73-30113  
Coherent receiver employing nonlinear coherence detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c07 N74-30523  
Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MSC-14557-1] c32 N76-16249

**RECONSTRUCTION**  
Method and means for recording and reconstructing holograms without use of reference beam  
[NASA-CASE-ERC-10020] c16 N71-26154

**RECORDING HEADS**  
Magnetic tape head function switching system  
[NASA-CASE-GSC-11956-1] c35 N75-25134

**RECORDING INSTRUMENTS**  
Weighing and recording device for obtaining precise automatic record of small changes in force  
[NASA-CASE-XLA-02605] c14 N71-10773  
Blood pressure measuring system for separately recording dc and ac pressure signals of Korotkoff sounds  
[NASA-CASE-XMS-06061] c05 N71-23317  
Helical recorder for multiple channel recording  
[NASA-CASE-GSC-10614-1] c09 N72-11224  
Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c16 N74-13205  
Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c14 N74-26946  
Measuring probe position recorder  
[NASA-CASE-LAR-10806-1] c14 N74-32877

**RECOVERABILITY**  
Ejectable underwater sound source recovery assembly  
[NASA-CASE-LAR-10595-1] c15 N74-16135

## RECOVERABLE LAUNCH VEHICLES

Techniques for recovery of multistage rocket vehicles by providing lifting surfaces on individual sections  
[NASA-CASE-XMF-00389] c31 N70-34176

## RECOVERABLE SPACECRAFT

Describing assembly for opening stabilizing and decelerating flaps of flight capsules used in space research  
[NASA-CASE-XMF-03169] c31 N71-15675

## RECOVERY PARACHUTES

Parachute system for lowering manned spacecraft from post-reentry to ocean landing  
[NASA-CASE-XLA-00195] c02 N70-38009  
Development and operating principles of gas generator for deploying recovery parachutes from space capsules during atmospheric entry  
[NASA-CASE-LAR-10549-1] c31 N73-13898

## RECTANGULAR PANELS

Rectangular solar cell stacked panels to generate electrical power aboard spacecraft  
[NASA-CASE-NPO-11771] c03 N73-20040

## RECTIFIERS

Lithium drifted silicon radiation detector with gold rectifying contacts  
[NASA-CASE-XLE-10529] c14 N69-23191  
Power control switching circuit using low voltage semiconductor controlled rectifiers for high voltage isolation  
[NASA-CASE-XNP-02713] c10 N69-39888  
Precision full wave rectifier circuit for rectifying incoming electrical signals having positive or negative polarity with only positive output signals  
[NASA-CASE-ARC-10101-1] c09 N71-33109  
Voltage amplitude-responsive trigger circuit with silicon controlled rectifier  
[NASA-CASE-GSC-10221-1] c09 N72-23171  
Dc to ac to dc converter with transistor driven synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c09 N72-25253

## REDUCED GRAVITY

Reduced gravity liquid configuration simulator to study propellant behavior in rocket fuel tanks  
[NASA-CASE-XLE-02624] c12 N69-39988  
Apparatus for measuring human body mass in zero or reduced gravity environment  
[NASA-CASE-XMS-03371] c05 N70-42000  
Cable suspension and inclined walkway system for simulating reduced or zero gravity environments  
[NASA-CASE-XLA-01787] c11 N71-16028  
Development of restraint system for securing personnel to ergometer while exercising under weightless conditions  
[NASA-CASE-MFS-21046-1] c14 N73-27377

## REDUCTION (CHEMISTRY)

Producing metal powders of controlled particle size by reducing oxide using reactive metal vapor in vacuum  
[NASA-CASE-XLE-06461] c17 N72-22530  
Process for making anhydrous metal halides  
[NASA-CASE-LEW-11860-1] c37 N76-18458

## REDUNDANT COMPONENTS

Redundant memory for enhanced reliability of digital data processing system  
[NASA-CASE-GSC-10564] c10 N71-29135

## REELS

Method and apparatus for measuring web material wound on a reel  
[NASA-CASE-GSC-11902-1] c35 N75-22687  
Reel safety brake  
[NASA-CASE-GSC-11960-1] c37 N76-13495

## REENTRY COMMUNICATION

Electrostatic modulator for communicating through plasma sheath formed around spacecraft during reentry  
[NASA-CASE-XLA-01400] c07 N70-41331  
Method and apparatus for communicating through ionized layer of gases surrounding spacecraft during reentry into planetary atmospheres  
[NASA-CASE-XLA-01127] c07 N70-41372  
Reentry communication by injection of water droplets into plasma layer surrounding space vehicle  
[NASA-CASE-XLA-01552] c07 N71-11284

## REENTRY SHIELDING

Transpirationally cooled heat ablation system for interplanetary spacecraft reentry shielding

[NASA-CASE-XMS-02677] c31 N70-42075  
Method and apparatus for fabrication of heat insulating and ablative reentry structure  
[NASA-CASE-XMS-02009] c33 N71-20834  
Ablative heat shield for protection from aerodynamic heating of reentry spacecraft  
[NASA-CASE-MSC-12143-1] c33 N72-17947  
Protected isotope heat source --- for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c73 N75-30876

## REENTRY TRAJECTORIES

Aerodynamic configuration of reentry vehicle heat shield to provide longitudinal and directional stability at hypersonic velocities  
[NASA-CASE-XMS-04142] c31 N70-41631

## REENTRY VEHICLES

Leading edge design for hypersonic reentry vehicles  
[NASA-CASE-XLA-00165] c31 N70-33242  
Delta winged, manned reentry vehicle capable of horizontal glide landing at low speeds  
[NASA-CASE-XLA-00241] c31 N70-37986  
Telespectrograph for analyzing upper atmosphere by tracking bodies reentering atmosphere at high velocities  
[NASA-CASE-XLA-03273] c14 N71-18699  
Ablation sensor for measuring surface ablation rate of material on vehicles entering earths atmosphere on entry into planetary atmospheres  
[NASA-CASE-XLA-01791] c14 N71-22991  
Design of ring wing vehicle of high drag-to-weight ratio to withstand reentry stress into low density atmosphere  
[NASA-CASE-XLA-04901] c31 N71-24315  
Development of auxiliary lifting system to provide ferry capability for entry vehicles  
[NASA-CASE-LAR-10574-1] c11 N73-13257  
Development and operating principles of gas generator for deploying recovery parachutes from space capsules during atmospheric entry  
[NASA-CASE-LAR-10549-1] c31 N73-13898  
Ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c18 N74-30004

## REFERENCE SYSTEMS

Automatic frequency control device for providing frequency reference for voltage controlled oscillator  
[NASA-CASE-KSC-10393] c09 N72-21247

## REFINING

Helium refining by superfluidity  
[NASA-CASE-INP-00733] c06 N70-34946

## REFLECTANCE

Optical characteristics measuring apparatus  
[NASA-CASE-XNP-08840] c23 N71-16365  
Device for determining acceleration of gravity by interferometric measurement of travel of falling body  
[NASA-CASE-XMF-05844] c14 N71-17587  
Highly stable optical mirror assembly optimizing image quality of light diffraction patterns  
[NASA-CASE-ERC-10001] c23 N71-24868  
Transmitting and reflecting diffuser  
[NASA-CASE-LAR-10385-3] c23 N73-32538

## REFLECTED WAVES

Device and method for determining X ray reflection efficiency, scattering properties, and surface finish of optical surfaces  
[NASA-CASE-MFS-20243] c23 N73-13662  
Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c36 N75-15028  
Reflected wave maser --- low noise amplifier  
[NASA-CASE-NPO-13490-1] c36 N75-16827

## REFLECTION

Vacuum preparation of zinc titanate pigment resistant to loss of reflective properties  
[NASA-CASE-MFS-13532] c18 N72-17532  
Solar cell surface treatment  
[NASA-CASE-LEW-11330-1] c44 N76-14612  
Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector --- for determining density of gas  
[NASA-CASE-ARC-10631-1] c74 N76-20958

## REFLECTOMETERS

Ellipsoidal mirror reflector for measuring reflectance  
[NASA-CASE-XGS-05291] c23 N71-16341

## REFLECTORS

Method of compactly packaging centrifugally expandable lightweight flexible reflector satellite  
[NASA-CASE-XLA-00138] c31 N70-37981

Antenna design with self erecting mesh reflector  
[NASA-CASE-IGS-09190] c31 N71-16102

Cylindrical reflector for resolving wide angle light beam from telescope into narrow beam for spectroscopic analysis  
[NASA-CASE-IGS-08269] c23 N71-26206

Conical reflector antenna with feed approximating line source  
[NASA-CASE-NPO-10303] c07 N72-22127

Target acquisition antenna feed with reflector system  
[NASA-CASE-GSC-10064-1] c10 N72-22235

Multipurpose microwave antenna, employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c07 N72-25174

Characteristics of microwave antenna with conical reflectors to generate plane wave front  
[NASA-CASE-NPO-11661] c07 N73-14130

**REFRACTOMETERS**  
Particle size spectrometer and refractometer  
[NASA-CASE-NPO-13614-1] c35 N75-19628

**REFRACTORY MATERIALS**  
Test apparatus for determining mechanical properties of refractory materials at high temperatures in vacuum or inert atmospheres  
[NASA-CASE-XLE-00335] c14 N70-35368

Method for producing refractory molybdenum disilicides  
[NASA-CASE-XHS-00370] c17 N71-20941

Prestressed rocket nozzle with ceramic inner rings and refractory metal outer rings  
[NASA-CASE-XNP-02888] c18 N71-21068

Semiconductor device manufacture using refractory dielectrics as diffusant masks and interconnection insulating materials  
[NASA-CASE-XPR-08476-1] c26 N72-17820

Electric furnace for vacuum and zero gravity melting of high melting point materials during earth orbit  
[NASA-CASE-MPS-20710] c11 N72-23215

Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-1] c06 N74-34579

**REFRACTORY METALS**  
Refractory filament series circuitry for radiant heater  
[NASA-CASE-XLE-00387] c33 N70-34812

Production of refractory bodies with controlled porosity by pressing and heating mixtures of refractory and inert metal powders  
[NASA-CASE-LEW-10393-1] c17 N71-15468

Multilayer porous refractory metal ionizer design with thick, porous, large-grain substrates and thin, porous micron-grain substrates  
[NASA-CASE-XNP-04338] c17 N71-23046

Brazing alloy adapted for brazing corrosion resistant steel to refractory metals, also for brazing refractory metals to other refractory metals  
[NASA-CASE-XNP-03063] c17 N71-23365

Development and characteristics of thermal radiation shielding of refractory metal foil used for induction furnace  
[NASA-CASE-XLE-03432] c33 N71-24145

Production of high strength refractory compounds and microconstituents into refractory metal matrix  
[NASA-CASE-XLE-03940] c18 N71-26153

Silicide coating process and composition for protection of refractory metals from oxidation  
[NASA-CASE-XLE-10910] c18 N71-29040

Development of procedure for improved distribution of refractory compounds and micro-constituents in refractory metal matrix  
[NASA-CASE-XLE-03940-2] c17 N72-28536

Method of making an apertured casting  
[NASA-CASE-LEW-11169-1] c15 N74-18131

Fused silicide coatings containing discrete particles for protecting niobium alloys --- used in space shuttle thermal protection systems and turbine engine components

[NASA-CASE-LEW-11179-1] c27 N76-16229

**REFRIGERATING**  
Heat exchanger and decontamination system for multistage refrigeration unit  
[NASA-CASE-NPO-10634] c23 N72-25619

**REFRIGERATING MACHINERY**  
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[NASA-CASE-NPO-10309] c15 N69-23190

Method and apparatus for producing very low temperature refrigeration based on gas pressure balance  
[NASA-CASE-XNP-08877] c15 N71-23025

Dual solid cryogens for spacecraft refrigeration insuring low temperature cooling for extended periods  
[NASA-CASE-GSC-10188-1] c23 N71-24725

Stirling cycle engine and refrigeration systems  
[NASA-CASE-NPO-13613-1] c37 N75-22747

**REFRIGERATORS**  
Intermittent type silica gel adsorption refrigerator for providing temperature control for spacecraft components  
[NASA-CASE-XNP-00920] c15 N71-15906

Helium refrigerator  
[NASA-CASE-NPO-13435-1] c31 N76-14284

**REGENERATION (ENGINEERING)**  
Switching circuit with regeneratively connected transistors eliminating power consumption when not in use  
[NASA-CASE-XNP-02654] c10 N70-42032

Direct current electromotive system for regenerative braking of electric motor  
[NASA-CASE-XNP-01096] c10 N71-16030

**REGENERATIVE COOLING**  
Metal ribbon wrapped outer wall for regeneratively cooled combustion chamber  
[NASA-CASE-XLE-00164] c15 N70-36411

Fabrication method for lightweight regeneratively cooled combustion chamber of channel construction  
[NASA-CASE-XLE-00150] c28 N70-41818

Regenerative cooling system for small rocket engine having restart capability and using noncryogenic hypergolic propellants  
[NASA-CASE-XLE-00685] c28 N70-41992

Regenerative cooling system for rocket combustion chamber using coolant tubes in convergent-divergent nozzle  
[NASA-CASE-XLE-04857] c28 N71-23968

Thermocouple apparatus for measuring wall temperatures in regeneratively cooled rocket engines having thin walled cooling passages  
[NASA-CASE-XLE-05230-2] c14 N73-13417

**REGENERATIVE FUEL CELLS**  
Electrolytically regenerative hydrogen-oxygen fuel cells  
[NASA-CASE-XLE-04526] c03 N71-11052

**REGENERATORS**  
Loop transponder for regenerating code of nu-type ranging system  
[NASA-CASE-NPO-11707] c07 N73-25161

**REGISTERS (COMPUTERS)**  
Data processor with plural register stages for selectively interconnecting with each other to effect multiplicity of operations  
[NASA-CASE-GSC-10186] c08 N71-33110

Priority interrupt system --- comprised of four registers  
[NASA-CASE-NPO-13067-1] c60 N76-18800

**REINFORCED PLASTICS**  
Process for developing filament reinforced plastic tubes used in research and development programs  
[NASA-CASE-LAR-10203-1] c15 N72-16330

Reinforced structural plastics  
[NASA-CASE-LEW-10199-1] c18 N74-23125

**REINFORCEMENT (STRUCTURES)**  
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[NASA-CASE-XNP-01962] c32 N70-41370

Fabrication of light weight panel structure using pairs of elongate hollow ribs of semicircular configuration  
[NASA-CASE-LAR-11052-1] c32 N73-13929

**REINFORCING FIBERS**  
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[NASA-CASE-XLE-02428] c17 N70-33288



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## REMOTELY PILOTED VEHICLES

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[NASA-CASE-XLE-00231] c17 N70-38198
- Description of method for producing metallic composites reinforced with ceramic and refractory hard metals that are fibered in place  
[NASA-CASE-XLE-03925] c18 N71-22894
- Production and application of sprayable fiber reinforced ablation material  
[NASA-CASE-XLA-04251] c18 N71-26100
- Method of preparing graphite reinforced aluminum composite  
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- Improved method of making reinforced composite structures  
[NASA-CASE-LEW-12619-1] c24 N76-16181
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[NASA-CASE-GSC-10022-1] c10 N71-25882
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[NASA-CASE-GSC-10118-1] c07 N71-24621
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[NASA-CASE-XLA-00679] c15 N70-38601
- Quick-release coupling for fueling rocket vehicles with cryogenic propellants  
[NASA-CASE-IKS-01985] c15 N71-10782
- Design and development of release mechanism for spacecraft components, releasable despin weights, and extensible gravity booms  
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[NASA-CASE-NPO-13086-1] c15 N73-12495
- RELIABILITY ENGINEERING**  
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- Gage for quality control of sealing surfaces of threaded boss  
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- Reliability of automatic refilling valving device for cryogenic liquid systems  
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- Reliability of electrical connectors after heat sterilization  
[NASA-CASE-NPO-10694] c09 N72-20200
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[NASA-CASE-XLA-02854] c15 N69-27490
- Power controlled bimetallic electromechanical actuator for accurate, timely, and reliable response to remote control signal  
[NASA-CASE-XNP-09776] c09 N69-39929
- Controlled caging and uncaging mechanism for remote instrument control  
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[NASA-CASE-XLE-00397] c15 N70-36492
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[NASA-CASE-XLA-00711] c03 N71-12258
- Remotely actuated quick disconnect for tubular umbilical conduits used to transfer fluids from ground to rocket vehicle  
[NASA-CASE-XLA-01396] c03 N71-12259
- Remote control device operated by movement of finger tips for manual control of spacecraft attitude  
[NASA-CASE-XAC-02405] c09 N71-16089
- Satellite radio communication system with remote steerable antenna  
[NASA-CASE-XNP-02389] c07 N71-28900
- Laser beam projector for continuous, precise alignment between target, laser generator, and astronomical telescope during tracking  
[NASA-CASE-NPO-11087] c23 N71-29125
- Solid state remote circuit selector switching circuit  
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[NASA-CASE-LAR-10311-1] c16 N73-16536
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[NASA-CASE-MFS-22707-1] c37 N76-15457
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[NASA-CASE-MFS-22022-1] c37 N76-15460
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[NASA-CASE-MFS-14405] c15 N72-28495
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[NASA-CASE-LAR-10634-1] c15 N74-18123
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[NASA-CASE-XMP-14032] c20 N71-16340
- Ionization control system design for monitoring separately located ion gage pressures on vacuum chambers  
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[NASA-CASE-XLE-04503] c14 N71-24864
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[NASA-CASE-NPO-10143] c10 N71-26326
- Development of radiometric sensor to warn aircraft pilots of region of clear air turbulence along flight path  
[NASA-CASE-ERC-10081] c14 N72-28437
- Development of electronic detection system for remotely determining number and movement of enemy personnel  
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- Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c10 N74-19870
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[NASA-CASE-NPO-13462-1] c35 N75-16807
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[NASA-CASE-KSC-10736-1] c33 N75-19521
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## REMOVAL

## SUBJECT INDEX

## REMOVAL

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sync pulse for activating binary counter to  
produce signal identifying time slot for station  
[NASA-CASE-GSC-10373-1] c07 N71-19773

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substitution in electron beam tube  
[NASA-CASE-NPO-10625] c09 N71-26182

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observer-controlled object with a target  
[NASA-CASE-MFS-23052-1] c09 N75-25965

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Backpack carrier with retractable legs suitable  
for lunar exploration and convertible to  
rescue vehicle  
[NASA-CASE-LAR-10056] c05 N71-12351  
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with inflatable flotation device for water  
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[NASA-CASE-MSC-12564-1] c54 N76-15792  
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[NASA-CASE-XPR-00929] c31 N70-34966  
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research vehicle  
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stress transducer design with bonded  
semiconductive piezoresistive element for  
sensing residual stresses  
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Manufacturing process for making perspiration  
resistant-stress resistant biopotential  
electrode  
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for determining viscoelastic properties of  
polymers  
[NASA-CASE-XLA-08254] c14 N71-26161

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thermal protective sleeves to magnesium alloy  
conical shell components with different  
thermal coefficients  
[NASA-CASE-XLA-01262] c15 N71-21404  
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volatile and reactive halogen for fuel fire  
control  
[NASA-CASE-ARC-10098-1] c06 N71-24739  
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resistant-stress resistant biopotential  
electrode  
[NASA-CASE-MSC-90153-2] c05 N72-25120  
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leather wiper  
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electrothermal rocket engines

[NASA-CASE-XLE-01783] c28 N70-34175

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[NASA-CASE-IAC-00404] c08 N70-40125  
Cylindrical reflector for resolving wide angle  
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[NASA-CASE-XGS-08269] c23 N71-26206

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[NASA-CASE-MSC-14066-1] c10 N74-27705

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elements resonant frequency displacement  
amplitude  
[NASA-CASE-IAC-02807] c09 N71-23021  
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resonant frequencies  
[NASA-CASE-XNP-02500] c18 N71-27397  
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suppressing oscillations across inductor  
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resonator pairs for microwave frequency  
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aerospace environments  
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## RESPIRATORS

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respirator  
[NASA-CASE-PRC-10012] c14 N72-17329

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pressure for application to respiration rate  
studies  
[NASA-CASE-PRC-10022] c12 N71-26546  
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flow rate and frequency of respiration and  
expiration cycles in real time  
[NASA-CASE-MSC-13436-1] c05 N73-32015  
Metabolic analyzer --- for measuring metabolic  
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[NASA-CASE-MFS-21415-1] c05 N74-20728

## RESPIROMETERS

Metabolic analyzer --- for measuring metabolic  
rate and breathing dynamics of human beings  
[NASA-CASE-MFS-21415-1] c05 N74-20728

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devices by using frequency division multiplex  
technique  
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[NASA-CASE-XGS-05715] c23 N71-16100  
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# ROTATION

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## ROTATION

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**RUPTURING**

Knife structure for controlling rupture of shock tube diaphragms [NASA-CASE-XAC-00731] c11 N71-15960

## S

### SAFETY DEVICES

Helmet and torso tiedown mechanism for shortening pressure suits upon inflation [NASA-CASE-XMS-00784] c05 N71-12335

Positive locking check valve for stopping reversed flow [NASA-CASE-XMS-09310] c15 N71-22706

Description of protective device for providing safe operating conditions around work piece in

machine or metal working tool [NASA-CASE-XLE-01092] c15 N71-22797

Velocity limiting safety system for motor driven research vehicle [NASA-CASE-XLA-07473] c15 N71-24895

Device for generating and controlling combustion products for testing of fire detection system [NASA-CASE-GSC-11095-1] c14 N72-10375

Restraint torso for increased mobility and reduced physiological effects while wearing pressurized suits [NASA-CASE-HSC-12397-1] c05 N72-25119

Totally confined explosive welding --- apparatus to reduce noise level and protect personnel during explosive bonding [NASA-CASE-LAR-10941-1] c15 N74-21057

Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft [NASA-CASE-LAR-10753-1] c02 N74-30421

Shoulder harness and lap belt restraint system [NASA-CASE-ARC-10519-2] c05 N75-25915

Ion beam thruster shield [NASA-CASE-LEW-12082-1] c20 N75-32166

**SABA EQUATIONS**

Cosmic dust analyzer [NASA-CASE-MSC-13802-2] c35 N76-15431

**SALT BATHS**

Application techniques for protecting materials during salt bath brazing [NASA-CASE-XLE-00046] c15 N70-33311

**SAMARIUM**

Gadolinium or samarium doped-silicon semiconductor material with resistance to radiation damage for use in solar cells [NASA-CASE-XLE-10715] c26 N71-23292

**SAMPLERS**

Portable vacuum probe surface sampler for sampling large surface areas with relatively light loading densities of microorganisms [NASA-CASE-LAR-10623-1] c14 N73-30395

**SAMPLING**

Impact bit for cutting, collecting, and storing samples such as lunar rock cuttings [NASA-CASE-XNP-01412] c15 N70-42034

Design and development of fluid sample collector [NASA-CASE-XMS-06767-1] c14 N71-20435

Design and development of two types of atmosphere sampling chambers [NASA-CASE-NPO-11373] c13 N72-25323

Digital to analog converter for sampled signal reconstruction [NASA-CASE-MSC-12458-1] c08 N73-32081

Rock sampling --- apparatus for controlling particle size [NASA-CASE-XNP-10007-1] c15 N74-23068

Rock sampling --- method for controlling particle size distribution [NASA-CASE-XNP-09755] c15 N74-23069

Apparatus for microbiological sampling --- including automatic swabbing [NASA-CASE-LAR-11069-1] c35 N75-12272

Automatic biowaste sampling [NASA-CASE-MSC-14640-1] c54 N76-14804

**SANDWICH STRUCTURES**

Sandwich panel structure for removing heat from shield between hot and cold areas [NASA-CASE-XLA-00349] c33 N70-37979

Particle detector for measuring micrometeoroid velocity in space [NASA-CASE-XLA-00495] c14 N70-41332

Capacitor sandwich structure containing metal sheets of known thickness for counting penetration rates of meteoroids [NASA-CASE-XLE-01246] c14 N71-10797

Technique for making foldable, inflatable, plastic honeycomb core panels for use in building and bridge structures, light and radio wave reflectors, and spacecraft [NASA-CASE-XLA-03492] c15 N71-22713

Punch and die device for forming convolution series in thin gage metal hemispheres [NASA-CASE-XNP-05297] c15 N71-23811

**SAPPHIRE**

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide [NASA-CASE-GSC-11577-1] c37 N75-15992

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide [NASA-CASE-GSC-11577-3] c24 N76-19234

## SATELLITE ANTENNAS

- Monopole antenna system for maximum omnidirectional efficiency for use on satellites [NASA-CASE-XLA-00414] c07 N70-38200
- Development of antenna system for spin stabilized communication satellite for simultaneous reception and transmission of data [NASA-CASE-XGS-02607] c31 N71-23009

## SATELLITE ATTITUDE CONTROL

- Photosensitive light source device for detecting unmanned spacecraft deviation from reference attitude [NASA-CASE-XNP-00438] c21 N70-35089
- Attitude control system for spacecraft based on conversion of incident solar radiation on movable control surfaces into mechanical torques [NASA-CASE-XNP-02982] c31 N70-41855
- Design and development of satellite despun device [NASA-CASE-XMP-08523] c31 N71-20396
- Utilization of momentum devices for forming attitude control and damping system for spacecraft [NASA-CASE-XLA-02551] c21 N71-21708
- Gravity gradient attitude control system with gravity gradiometer and reaction wheels for artificial satellite attitude control [NASA-CASE-GSC-10555-1] c21 N71-27324
- Method and apparatus for providing active attitude control for spacecraft by converting any attitude motion of vehicle into simple rotational motion [NASA-CASE-HQN-10439] c21 N72-21624
- Momentum wheel design for spacecraft attitude control and magnetic drum and head system for data storage [NASA-CASE-NPO-11481] c21 N73-13644
- An attitude control system [NASA-CASE-MPS-22787-1] c21 N74-35096
- Combination automatic-starting electrical plasma torch and gas shutoff valve --- for satellite attitude control [NASA-CASE-XLE-10717] c37 N75-29426

## SATELLITE CONTROL

- Stabilization system for gravity-oriented satellites using single damper rod [NASA-CASE-XAC-01591] c31 N71-17729

## SATELLITE DESIGN

- Inflation system for balloon type satellites [NASA-CASE-XGS-03351] c31 N71-16081

## SATELLITE INSTRUMENTS

- Satellite stabilization reaction wheel scanner [NASA-CASE-XGS-02629] c14 N71-21082
- Economical satellite aided vehicle avoidance system for preventing midair collisions [NASA-CASE-ERC-10419] c21 N72-21631

## SATELLITE NETWORKS

- Satellite network synchronization system with multiple access to multiplex repeater [NASA-CASE-GSC-10390-1] c07 N72-11149

## SATELLITE ORBITS

- Development of method and apparatus for spinning satellite about selected axis after reaching predetermined orientation [NASA-CASE-HQN-00936] c31 N71-29050

## SATELLITE ORIENTATION

- Sensing method and device for determining orientation of space vehicle or satellite by using particle traps [NASA-CASE-XGS-00466] c21 N70-34297
- Spin phase synchronization of cartwheel satellite in polar orbit [NASA-CASE-XGS-05579] c31 N71-15676
- Development of method and apparatus for spinning satellite about selected axis after reaching predetermined orientation [NASA-CASE-HQN-00936] c31 N71-29050
- Analog spatial maneuver computer with three output angles for obtaining desired spatial attitude [NASA-CASE-GSC-10880-1] c08 N72-11172

## SATELLITE PERTURBATION

- Flexible turnstile antenna system for reducing nutation in spin-oriented satellites [NASA-CASE-XMP-00442] c31 N71-10747

## SATELLITE ROTATION

- Optical scanner mounted on rotating support structure with method of compensating for image or satellite rotation [NASA-CASE-XGS-02401] c14 N69-27485

Stretch Yo-Yo mechanism for reducing initial spin rate of space vehicle

- [NASA-CASE-XGS-00619] c30 N70-40016
- Development of method and apparatus for spinning satellite about selected axis after reaching predetermined orientation [NASA-CASE-HQN-00936] c31 N71-29050

## SATELLITE TELEVISION

- Adaptive signal generating system and logic circuits for satellite television systems [NASA-CASE-GSC-11367] c10 N71-26374

## SATELLITE TRACKING

- Design and development of tracking receiver for tracking satellites and receiving radio signal transmissions under adverse noise conditions [NASA-CASE-XGS-08679] c10 N71-21473
- Simultaneous acquisition of tracking data from two stations [NASA-CASE-NPO-13292-1] c32 N75-15854

## SATELLITE TRANSMISSION

- Asynchronous, multiplexing, single line transmission and recovery data system --- for satellite use [NASA-CASE-NPO-13321-1] c32 N75-26195

## SATELLITE-BORNE PHOTOGRAPHY

- Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly --- for use with cameras mounted in satellites [NASA-CASE-GSC-11560-1] c09 N74-20861

## SATURATION

- Saturable magnetic core and signal detection for indicating impending saturation [NASA-CASE-ERC-10089] c23 N72-17747

## SAWTOOTH WAVEFORMS

- Linear sawtooth voltage wave generator with transistor timing circuit having capacitor and zener diode feedback loops [NASA-CASE-XMS-01315] c09 N70-41675

## SCANNERS

- Electronic and mechanical scanning control system for monopulse tracking antenna [NASA-CASE-XGS-05582] c07 N69-27460
- Electronic background suppression field scanning sensor for detecting point source targets [NASA-CASE-XGS-05211] c07 N69-39980
- Electron beam scanning system for improved image definition and reduced power requirements for video signal transmission [NASA-CASE-ERC-10552] c09 N71-12539
- Satellite stabilization reaction wheel scanner [NASA-CASE-XGS-02629] c14 N71-21082
- Monopulse scanning network for scanning volumetric antenna pattern [NASA-CASE-GSC-10299-1] c09 N71-24804
- High speed scanner for measuring mass of preselected gases at high sampling rate [NASA-CASE-LAR-10766-1] c14 N72-21432
- Scan oscilloscope for mapping surface sensitivity of photomultiplier tube [NASA-CASE-LAR-10320-1] c09 N72-23172
- Ultrasonic scanner for radial and flat panels [NASA-CASE-MPS-20335-1] c14 N74-10415
- Apparatus for scanning the surface of a cylindrical body [NASA-CASE-NPO-11861-1] c14 N74-20009
- Fast scan control for deflection type mass spectrometers [NASA-CASE-LAR-11428-1] c14 N74-34857
- Liquid-cooled brassiere [NASA-CASE-ARC-11007-1] c52 N76-18782

## SCANNING

- Conversion system for transforming slow scan rate of Apollo TV camera on moon to fast scan of commercial TV [NASA-CASE-XMS-07168] c07 N71-11300
- Operation of vidicon tube for scanning spatial charge density pattern [NASA-CASE-XNP-06028] c09 N71-23189
- Position determination systems --- using orbital antenna scan of celestial bodies [NASA-CASE-MSC-12593-1] c17 N76-21250

## SCHOOLS

- Silent alarm system for multiple room facility or school [NASA-CASE-NPO-11307-1] c10 N73-30205

## SCHOTTKY DIODES

- High voltage, high current Schottky barrier solar cell [NASA-CASE-NPO-13482-1] c03 N74-30448

## SCOOPS

Aeroflexible wing structure with air scoop for inflating stiffeners with ram air  
[NASA-CASE-XLA-06095] c01 N69-39981

## SCREWS

Electromechanical control actuator system using double differential screws  
[NASA-CASE-ERC-10022] c15 N71-26635  
Adjustable support device with jacket screw for altering distance between base and supported member  
[NASA-CASE-NPO-10721] c15 N72-27484

## SCRUBBERS

Developing high pressure gas purification and filtration system for use in test operations of space vehicles  
[NASA-CASE-MPS-12806] c14 N71-17588

## SEA ICE

Laser technique for breaking ice in ship path  
[NASA-CASE-LAR-10815-1] c16 N72-22520

## SEALERS

Design and development of flexible joint for pressure suits  
[NASA-CASE-XMS-09636] c05 N71-12344  
Epoxy resin sealing device for electrochemical cells in high vacuum environments  
[NASA-CASE-XGS-02630] c03 N71-22974  
Leak resistant bonded elastomeric seal for secondary electrochemical cells  
[NASA-CASE-XGS-02631] c03 N71-23006  
Self lubricating fluoride-metal composite materials for outer space applications  
[NASA-CASE-XLE-08511] c18 N71-23710  
Polyimides of ether-linked aryl tetracarboxylic dianhydrides  
[NASA-CASE-MPS-22355-1] c23 N76-15268

## SEALING

Foil seal between parts moving relative to each other  
[NASA-CASE-XLE-05130] c15 N69-21362  
Sealed electric storage battery with gas manifold interconnecting each cell  
[NASA-CASE-XNP-03378] c03 N71-11051  
Epoxy resin sealing device for electrochemical cells in high vacuum environments  
[NASA-CASE-XGS-02630] c03 N71-22974  
Electrode sealing and insulation for fuel cells containing caustic liquid electrolytes using powdered plastic and metal  
[NASA-CASE-XMS-01625] c15 N71-23022  
Sealing evacuation port and evacuating vacuum container such as space jackets  
[NASA-CASE-XNP-03290] c15 N71-23256  
Segmented sealing surface in valve seat  
[NASA-CASE-NPO-10606] c15 N72-25451

## SEALS (STOPPERS)

Spacecraft battery seals  
[NASA-CASE-XGS-03864] c15 N69-24320  
Flexible inflatable seal for butterfly valves  
[NASA-CASE-XLE-00101] c15 N70-33376  
Shrink-fit vacuum system gas valve  
[NASA-CASE-XGS-00587] c15 N70-35087  
Thin walled pressure test vessel using low-melting alloy-filled joint to attach shell to heads  
[NASA-CASE-XLE-04677] c15 N71-10577  
Fluid seal formed by flexible disk on rotating shaft to retain lubricating oils around shaft  
[NASA-CASE-XLE-05130-2] c15 N71-19570  
Sealed storage container for channel carriers with mounted miniature electronic components  
[NASA-CASE-MPS-20075] c09 N71-26133  
Liquid-vapor interface seal design for turbine rotating shafts including helical and molecular pumps and liquid cooling of mercury vapor  
[NASA-CASE-XNP-02862-1] c15 N71-26294  
Spiral groove seal --- for rotating shaft  
[NASA-CASE-XLE-10326-4] c15 N74-15125  
Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c15 N74-21063  
High speed, self-acting shaft seal --- for use in turbine engines  
[NASA-CASE-LEW-11274-1] c37 N75-21631  
High temperature oxidation resistant cermet compositions --- for use in thermionic converters or diodes  
[NASA-CASE-NPO-13666-1] c27 N76-13293

## Circumferential shaft seal

[NASA-CASE-LEW-12119-1] c37 N76-20488  
Manufacture of glass-to-metal seals wherein the cleanliness of the process is enhanced and the leak resistance of the resulting seal is maximized  
[NASA-CASE-LAR-11563-1] c37 N76-21558

## SEAMS (JOINTS)

Sealing apparatus for joining two pieces of frangible materials  
[NASA-CASE-XLA-01494] c15 N71-24164  
Cord restraint system for pressure suit joints  
[NASA-CASE-XMS-09635] c05 N71-24623  
Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c15 N74-11301

## SEAT BELTS

Shoulder harness and lap belt restraint system  
[NASA-CASE-ARC-10519-2] c05 N75-25915

## SECTORS

Journal Bearings  
[NASA-CASE-LEW-11076-2] c15 N74-32921

## SEGMENTS

Fabrication of curved reflector segments for solar mirror  
[NASA-CASE-XLE-08917] c15 N71-15597

## SEISMIC WAVES

Determining sway of buildings by low frequency device using pendulum  
[NASA-CASE-XNP-00479] c14 N70-34794

## SELECTORS

Selector mechanism for mechanical separation and discrimination of high velocity molecular particles  
[NASA-CASE-XLE-01533] c11 N71-10777  
Peak polarity selector for monitoring waveforms  
[NASA-CASE-FRC-10010] c10 N71-24862

## SELF ALIGNMENT

Electro-optical system for maintaining two-axis alignment during milling operations on large tank-sections  
[NASA-CASE-XNP-00908] c14 N70-40238

## SELF ERECTING DEVICES

Self-erectable space structures of flexible foam for application in planetary orbits  
[NASA-CASE-XLA-00686] c31 N70-34135  
Manned space station collapsible for launching and self-erectable in orbit  
[NASA-CASE-XLA-00678] c31 N70-34296  
Manned space station launched in packaged condition and self erecting in orbit  
[NASA-CASE-XLA-00258] c31 N70-38676  
Foldable conduit capable of springing back as self erecting structural member  
[NASA-CASE-XLE-00620] c32 N70-41579  
Antenna design with self erecting mesh reflector  
[NASA-CASE-XGS-09190] c31 N71-16102  
Self erecting parabolic reflector design for use in space  
[NASA-CASE-XMS-03454] c09 N71-20658

## SELF LUBRICATING MATERIALS

Self lubricating fluoride-metal composite materials for outer space applications  
[NASA-CASE-XLE-08511] c18 N71-23710  
Self lubricating gears and other mechanical parts having surface adapted to frictional contact  
[NASA-CASE-MPS-14971] c15 N71-24984

## SELF MANEUVERING UNITS

Hand-held maneuvering unit for propulsion and attitude control of astronauts in zero or reduced gravity environment  
[NASA-CASE-XMS-05304] c05 N71-12336  
Lightweight propulsion unit for movement of personnel and equipment across lunar surface  
[NASA-CASE-MPS-20130] c28 N71-27585

## SELF PROPAGATION

Self-generating optical frequency waveguide  
[NASA-CASE-HQN-10541-1] c07 N71-26291

## SELF SEALING

Modification of one man life raft  
[NASA-CASE-LAR-10241-1] c05 N74-14845

## SEMICONDUCTOR DEVICES

Fixture for simultaneously supporting several components for electrical testing  
[NASA-CASE-XNP-06032] c09 N69-21926  
Semiconductor p-n junction on needle apex to provide stress and strain sensor  
[NASA-CASE-XLA-04980] c09 N69-27422



- Selective gold diffusion on monolithic silicon chips for switching and nonswitching amplifier devices and circuits and linear and digital logic circuits.  
[NASA-CASE-ERC-10072] c09 N70-11148
- Extra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit  
[NASA-CASE-XGS-00381] c09 N70-34819
- Method of forming thin window drifted silicon charged particle detector  
[NASA-CASE-XLE-00808] c24 N71-10560
- Doping silicon material with gadolinium to increase radiation resistance of solar cells  
[NASA-CASE-XLE-02792] c26 N71-10607
- Separation of semiconductor wafer into chips bounded by scribe lines  
[NASA-CASE-ERC-10138] c26 N71-14354
- Voltage tunable Gunn effect semiconductor for microwave generation  
[NASA-CASE-XER-07894] c09 N71-18721
- Indicator device for monitoring charge of wet cell battery, using semiconductor light emitter and photodetector  
[NASA-CASE-NPO-10194] c03 N71-20407
- Signaling summary alarm circuit with semiconductor switch for faulty contact indications  
[NASA-CASE-XLE-03061-1] c10 N71-24798
- Method for temperature compensating semiconductor gages by exposure to high energy radiation  
[NASA-CASE-XLA-04555-1] c14 N71-25892
- Development and characteristics of fluid oscillator analog to digital converter with variable frequency controlled by signal passing through conditioning circuit  
[NASA-CASE-LEW-10345-1] c10 N71-25899
- Volume displacement transducer for leak detection in hermetically sealed semiconductor devices  
[NASA-CASE-ERC-10033] c14 N71-26672
- Inverter drive circuit for semiconductor switch  
[NASA-CASE-LEW-10233] c10 N71-27126
- Test chambers with orifice and helium mass spectrometer for detecting leak rate of encapsulated semiconductor devices  
[NASA-CASE-ERC-10150] c14 N71-28992
- Semiconductor device manufacture using refractory dielectrics as diffusant masks and interconnection insulating materials  
[NASA-CASE-XER-08476-1] c26 N72-17820
- Single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c09 N72-22199
- Development of process for forming insulating layer between two electrical conductor or semiconductor materials  
[NASA-CASE-LEW-10489-1] c15 N72-25447
- Multiterminal Gunn-type semiconductor microwave generator for producing stable signals  
[NASA-CASE-XER-07895] c26 N72-25679
- Miniature piezoelectric semiconductor transducer with in situ stress coupling  
[NASA-CASE-ERC-10087-2] c14 N72-31446
- Development and characteristics of hermetically sealed coaxial package for containing microwave semiconductor components  
[NASA-CASE-GSC-10791-1] c15 N73-14469
- Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c09 N74-33740
- Semiconductor projectile impact detector  
[NASA-CASE-MPS-23008-1] c35 N76-19405
- SEMICONDUCTOR JUNCTIONS**
- Gallium arsenide solar cell preparation by surface deposition of cuprous iodide on thin n-type polycrystalline layers and heating in iodine vapor  
[NASA-CASE-XNP-01960] c09 N71-23027
- Miniature electromechanical junction transducer operating on piezoelectric effect and utilizing epoxy for stress coupling component  
[NASA-CASE-ERC-10087] c14 N71-27334
- Resin for protecting p-n semiconductor junction surface  
[NASA-CASE-ERC-10339-1] c18 N73-30532
- SEMICONDUCTORS (MATERIALS)**
- Hole mobility of deposited semiconductor films in vacuum utilizing thermal gradient  
[NASA-CASE-XKS-04614] c15 N69-21460
- Semiconductor in resonant cavity for improving signal to noise ratio of communication receiver  
[NASA-CASE-MSC-12259-1] c07 N70-12616
- Improved semiconductor multivibrator circuit which approaches 100 percent efficiency  
[NASA-CASE-XAC-00942] c10 N71-16042
- Fabrication of sintered impurity semiconductor brushes for electrical energy transfer  
[NASA-CASE-XNP-01016] c26 N71-17818
- Binding layer of semiconductor particles by electrodeposition  
[NASA-CASE-XNP-01959] c26 N71-23043
- Gadolinium or samarium doped-silicon semiconductor material with resistance to radiation damage for use in solar cells  
[NASA-CASE-XLE-10715] c26 N71-23292
- Characteristics of infrared photodetectors manufactured from semiconductor material irradiated by electron beam  
[NASA-CASE-LAR-10728-1] c14 N73-12445
- Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c33 N75-27251
- Vapor deposition apparatus --- semiconductors and gallium arsenides  
[NASA-CASE-HQN-10462] c25 N75-29192
- Method of crystallization --- for semiconductor materials used to manufacture electronic components  
[NASA-CASE-MPS-23001-1] c76 N75-32928
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- Design of active RC network capable of operating at high Q values with reduced sensitivity to gain amplification and number of passive components  
[NASA-CASE-ARC-10042-2] c10 N72-11256
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- Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c24 N75-30260
- Medical subject monitoring systems --- multichannel monitoring systems  
[NASA-CASE-MSC-14180-1] c52 N76-14757
- SENSORY PERCEPTION**
- Prosthetic limb with tactile sensing device  
[NASA-CASE-MPS-16570-1] c05 N73-32013
- SEPARATED FLOW**
- Thrust vector control by secondary injection of fluid into rocket nozzle flow field to separate exhaust flow  
[NASA-CASE-XLE-00208] c28 N70-34294
- Double hinged flap for boundary layer control over trailing edges of wings  
[NASA-CASE-XLA-01290] c02 N70-42016
- Separation cell with permeable membranes for fluid mixture component separation  
[NASA-CASE-XMS-02952] c18 N71-20742
- SEPARATORS**
- Condenser-separator for dehumidifying air utilizing sintered metal surface  
[NASA-CASE-XLA-08645] c15 N69-21465
- Umbilical separator for rockets  
[NASA-CASE-XNP-00425] c11 N70-38202
- Liquid-gas separator adapted for use in zero gravity environment - drawings  
[NASA-CASE-XMS-01624] c15 N70-40062
- Describing apparatus for separating gas from cryogenic liquid under zero gravity and for venting gas from fuel tank  
[NASA-CASE-XLE-00586] c15 N71-15968
- Liquid-gaseous centrifugal separator for weightlessness environment  
[NASA-CASE-XLA-00415] c15 N71-16079
- Development of liquid separating system using capillary device connected to flexible bladder storage chamber  
[NASA-CASE-XMS-13052] c14 N71-20427
- Vapor-liquid separator design with vapor driven pump for separated liquid pumping for application in propellant transfer  
[NASA-CASE-XNP-04042] c15 N71-23023
- Device for removing air from water for use in life support systems in manned space flight  
[NASA-CASE-XLA-8914] c15 N73-12492
- Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c12 N74-30608
- Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c34 N75-26282

# SEQUENCING

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- Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c31 N75-32262
- Method and apparatus for fluffing, separating,  
and cleaning fibers  
[NASA-CASE-LAR-11224-1] c37 N76-18456
- Flexible formulated plastic separators for  
alkaline batteries  
[NASA-CASE-LEW-12363-1] c44 N76-19552
- ## SEQUENCING
- Synchronous counter design incorporating  
cascaded binary stages driven by previous  
stages and inputs through NAND gates  
[NASA-CASE-IGS-02440] c08 N71-19432
- Pulse duration control device for driving slow  
response time loads in selected sequence  
including switching and delay circuits and  
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[NASA-CASE-XGS-04224] c10 N71-26418
- Digital function generator for generating any  
arbitrary single valued function  
[NASA-CASE-NPO-11104] c08 N72-22165
- MOD 2 sequential function generator for multibit  
sequence, with two-bit shift register for each  
pair of bits  
[NASA-CASE-NPO-10636] c08 N72-25210
- Linear shift register with feedback logic for  
generating pseudonoise linear recurring binary  
sequences  
[NASA-CASE-NPO-11406] c08 N73-12175
- Mechanical sequencer  
[NASA-CASE-MSC-19536-1] c37 N76-19439
- ## SEQUENTIAL ANALYSIS
- Binary coded sequential acquisition ranging  
system for distance measurements  
[NASA-CASE-NPO-11194] c08 N72-25209
- Event sequence detector with several input and  
shift register responsive to clock pulses  
[NASA-CASE-NPO-11703-1] c10 N73-32144
- ## SEQUENTIAL CONTROL
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[NASA-CASE-NPO-10351] c08 N71-12503
- Binary sequence detector with few memory  
elements and minimized logic circuit complexity  
[NASA-CASE-XNP-05415] c08 N71-12505
- The dc-to-dc converters employing staggered  
phase power switches with two loop control  
[NASA-CASE-NPO-13512-1] c33 N75-15876
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[NASA-CASE-NPO-12119-1] c52 N75-15270
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- Service life of electromechanical device for  
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[NASA-CASE-LAR-10503-1] c09 N72-21248
- Lead-oxygen dc power supply system  
[NASA-CASE-MPS-23059-1] c44 N75-16078
- ## SERVOAMPLIFIERS
- Pneumatic servoamplifier for controlling flow  
regulation  
[NASA-CASE-MSC-12121-1] c15 N71-27147
- ## SERVOCONTROL
- Electronic and mechanical scanning control  
system for monopulse tracking antenna  
[NASA-CASE-XGS-05582] c07 N69-27460
- Proportional controller for regulating aircraft  
or spacecraft motion about three axes  
[NASA-CASE-XAC-03392] c03 N70-41954
- Modulating and controlling intensity of light  
beam from high temperature source by  
servocontrolled rotating cylinders  
[NASA-CASE-XMS-04300] c09 N71-19479
- Servocontrol system for measuring local stresses  
at geometric discontinuity in stressed material  
[NASA-CASE-XLA-08530] c32 N71-25360
- System to control speed of hydraulically movable  
members by limiting energy applied to  
actuators with hydraulic servo loop  
[NASA-CASE-ARC-10131-1] c15 N71-27754
- Anthropomorphic master/slave manipulator system  
[NASA-CASE-ARC-10756-1] c15 N74-16139
- Digital servo controller --- for rotating  
antenna shaft  
[NASA-CASE-KSC-10769-1] c09 N74-29556
- Digital servo control of random sound test  
excitation --- in reverberant acoustic chamber  
[NASA-CASE-NPO-11623-1] c23 N74-31148
- Phase-locked servo system --- for synchronizing  
the rotation of slip ring assembly  
[NASA-CASE-MPS-22073-1] c33 N75-13139
- Servo-controlled intravital microscope system  
[NASA-CASE-NPO-13214-1] c35 N75-25123
- Simulator for practicing the mating of an  
observer-controlled object with a target  
[NASA-CASE-MPS-23052-1] c09 N75-25965
- ## SERVOMECHANISMS
- Servo system for retroreflector of Michelson  
interferometer  
[NASA-CASE-NPO-10300] c14 N71-17662
- Mechanical function generators with  
potentiometer as sensing element  
[NASA-CASE-XAC-00001] c15 N71-28952
- Closed loop servosystem for variable speed tape  
recorders onboard spacecraft  
[NASA-CASE-NPO-10700] c07 N71-33613
- Characteristics of lightweight actuator for  
imparting linear motion using elongated output  
shaft  
[NASA-CASE-NPO-11222] c15 N72-25456
- Development and characteristics of rotary  
actuator for use on spacecraft to deploy and  
support pivotal structures such as solar panels  
[NASA-CASE-NPO-10680] c31 N73-14855
- Method and apparatus for providing a servodrive  
signal in a high speed stepping interferometer  
[NASA-CASE-NPO-13569-1] c35 N75-21600
- ## SERVOMOTORS
- Automatic closed circuit television arc guidance  
control for welding joints  
[NASA-CASE-MPS-13046] c07 N71-19433
- Electric motor control system with pulse width  
modulation for providing automatic null  
seeking servo  
[NASA-CASE-XMF-05195] c10 N71-24861
- Development and characteristics of cyclically  
operable, optical shutter for use as focal  
plane shutter for transmitting single  
radiation pulses  
[NASA-CASE-NPO-10758] c14 N73-14427
- Development and characteristics of rotary  
actuator for use on spacecraft to deploy and  
support pivotal structures such as solar panels  
[NASA-CASE-NPO-10680] c31 N73-14855
- Servo valve  
[NASA-CASE-LAR-11643-1] c37 N75-13268
- ## SHAFTS (MACHINE ELEMENTS)
- Fatigue resistant shear pin with hollow shaft  
and two plugs  
[NASA-CASE-XLA-09122] c15 N69-27505
- Elastic universal joint for rocket motor mounting  
[NASA-CASE-XNP-00416] c15 N70-36947
- Air brake device for absorbing and measuring  
power from rotating shafts  
[NASA-CASE-XLE-00720] c14 N70-40201
- Two axis flight controller with potentiometer  
control shafts directly coupled to rotatable  
ball members  
[NASA-CASE-XPR-04104] c03 N70-42073
- Ratchet mechanism for high speed operation at  
reduced backlash  
[NASA-CASE-MPS-12805] c15 N71-17805
- Universal joints for connecting two displaced  
shafts or members  
[NASA-CASE-NPO-10646] c15 N71-28467
- Development of mating flat surfaces to inhibit  
leakage of fluid around shafts  
[NASA-CASE-XLE-10326-2] c15 N72-29488
- Fatigue life of hybrid antifriction bearings at  
ultrahigh speeds  
[NASA-CASE-LEW-11152-1] c15 N73-32359
- Spiral groove seal --- for hydraulic rotating  
shaft  
[NASA-CASE-LEW-10326-3] c15 N74-10474
- Hole cutter --- drill bits and rotating shaft  
[NASA-CASE-MPS-22649-1] c37 N75-25186
- Capacitive shaft encoder  
[NASA-CASE-ARC-10897-1] c35 N76-12338
- Counter pumping debris excluder and separator  
[NASA-CASE-LEW-11855-1] c37 N76-20487
- Circumferential shaft seal  
[NASA-CASE-LEW-12119-1] c37 N76-20488
- ## SHAPED CHARGES
- Coupling device for linear shaped charge for  
space vehicle abort system  
[NASA-CASE-XLA-00189] c33 N70-36846
- Development of remotely controlled shaped charge  
for lateral displacement of rocket stages  
after separation  
[NASA-CASE-XLA-04804] c31 N71-23008

## SHAPERS

- Mandrel for shaping solid propellant rocket fuel into engine casing  
[NASA-CASE-XLA-00304] c27 N70-34783
- Hand tool for forming dimples and nipples on end portion of tubes  
[NASA-CASE-XMS-06876] c15 N71-21536
- Dielectric apparatus for heating, fusing, and hardening of organic matrix to form plastic material into shaped product  
[NASA-CASE-LAR-10121-1] c15 N71-26721

## SHARKS

- Conditioning tanned sharkskin for use as abrasive resistant clothing  
[NASA-CASE-XMS-09691-1] c18 N71-15545

## SHEAR CREEP

- Measuring shear-creep compliance of solid and liquid materials used in spacecraft components  
[NASA-CASE-XLE-01481] c14 N71-10781

## SHEAR FLOW

- Shear modulated fluid amplifier of high pressure hydraulic vortex amplifier type  
[NASA-CASE-MPS-10412] c12 N71-17578

## SHEAR PROPERTIES

- Describing instrument capable of measuring true shear viscosity of liquids and viscoelastic materials  
[NASA-CASE-XNP-09462] c14 N71-17584

## SHEAR STRESS

- Fatigue resistant shear pin with hollow shaft and two plugs  
[NASA-CASE-XLA-09122] c15 N69-27505
- Development of combined velocimeter and accelerometer based on color changes in liquid crystalline material subjected to shear stresses  
[NASA-CASE-ERC-10292] c14 N72-25410
- Bonded joint and method --- for reducing peak shear stress in adhesive bonds  
[NASA-CASE-LAR-10900-1] c15 N74-23064

## SHELLS (STRUCTURAL FORMS)

- Channel-type shell construction for rocket engines and related configurations  
[NASA-CASE-XLE-00144] c28 N70-34860

## SHIELDING

- Flexible bellows joint shielding sleeve for propellant transfer pipelines  
[NASA-CASE-XNP-01855] c15 N71-28937
- Shielded flat conductor cable of ribbonlike wires laminates in thin flexible insulation  
[NASA-CASE-MPS-13687-2] c09 N72-22198

## SHIFT REGISTERS

- Binary to binary-coded decimal converter using single set of logic circuits notwithstanding number of shift register decades  
[NASA-CASE-XNP-00432] c08 N70-35423
- Linear three-tap feedback shift register  
[NASA-CASE-NPO-10351] c08 N71-12503
- Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits  
[NASA-CASE-XNP-01753] c08 N71-22897
- Commutator for steering precisely controlled bidirectional currents through numerous loads by use of magnetic core shift registers  
[NASA-CASE-NPO-10743] c08 N72-21199
- Multistage feedback shift register with states decomposable into cycles of equal length  
[NASA-CASE-NPO-11082] c08 N72-22167
- MOD 2 sequential function generator for multibit sequence, with two-bit shift register for each pair of bits  
[NASA-CASE-NPO-10636] c08 N72-25210
- Linear shift register with feedback logic for generating pseudonoise linear recurring binary sequences  
[NASA-CASE-NPO-11406] c08 N73-12175
- Family of m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c10 N73-20254
- Nonrecursive counting digital filter containing shift register  
[NASA-CASE-NPO-11821-1] c08 N73-26175
- Event sequence detector with several input and shift register responsive to clock pulses  
[NASA-CASE-NPO-11703-1] c10 N73-32144
- Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c07 N74-32598

## Nonlinear nonsingular feedback shift registers

- [NASA-CASE-NPO-13451-1] c33 N76-14373

## SHOCK ABSORBERS

- Pivotal shock absorbing assembly for use as load distributing portion in landing gear systems of space vehicles  
[NASA-CASE-XMP-03856] c31 N70-34159
- Energy dissipating shock absorbing system for land payload recovery or vehicle braking  
[NASA-CASE-XLA-00754] c15 N70-34850
- Shock absorbing couch for body support under high acceleration or deceleration forces  
[NASA-CASE-XMS-01240] c05 N70-35152
- Low onset rate energy absorber in form of strut assembly for crew couch of Apollo command module  
[NASA-CASE-MSC-12279-1] c15 N70-35679
- Landing pad assembly for aerospace vehicles  
[NASA-CASE-XMP-02853] c31 N70-36654
- Spacecraft shock absorbing system for soft landings  
[NASA-CASE-XMF-02108] c31 N70-36845
- Shock absorber for landing gear of lunar or planetary landing modules  
[NASA-CASE-XMP-01045] c15 N70-40354
- Shock absorbing articulated multiple couch assembly  
[NASA-CASE-MSC-11253] c05 N71-12343
- Design and development of double acting shock absorber for spacecraft docking operations  
[NASA-CASE-XMS-03722] c15 N71-21530
- Impact energy absorber with decreasing absorption rate  
[NASA-CASE-XLA-01530] c14 N71-23092
- Energy absorbing crew couch strut for Apollo command module  
[NASA-CASE-MSC-12279] c15 N72-17450
- Shock absorber for use as protective barrier in impact energy absorbing system  
[NASA-CASE-NPO-10671] c15 N72-20443

## SHOCK LOADS

- Damper system for alleviating air flow shock loads on wind tunnel models  
[NASA-CASE-XLA-09480] c11 N71-33612

## SHOCK MEASURING INSTRUMENTS

- Semiconductor projectile impact detector  
[NASA-CASE-MPS-23008-1] c35 N76-19405

## SHOCK RESISTANCE

- Removable potting compound for instrument shock protection  
[NASA-CASE-XLA-00482] c15 N70-36409
- Thermal shock resistant hafnia ceramic materials  
[NASA-CASE-LAR-10894-1] c18 N73-14584

## SHOCK TUBES

- Knife structure for controlling rupture of shock tube diaphragms  
[NASA-CASE-XAC-00731] c11 N71-15960
- Design, development, and operation of shock tube with bypass piston tunnel  
[NASA-CASE-NPO-12109] c11 N72-22245
- Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c09 N75-11997

## SHOCK WAVE INTERACTION

- Absorptive, nonreflecting barrier mounted between closely spaced jet engines on supersonic aircraft, for preventing shock wave interference  
[NASA-CASE-XLA-02865] c28 N71-15563

## SHOCK WAVE LUMINESCENCE

- Method and apparatus for measuring shock layer radiation distribution about high velocity objects  
[NASA-CASE-XAC-02970] c14 N69-39896

## SHOCK WAVE PROFILES

- Method and apparatus for measuring shock layer radiation distribution about high velocity objects  
[NASA-CASE-XAC-02970] c14 N69-39896

## SHOCK WAVES

- Apparatus for mechanically dispersing ultrafine metal powders subjected to shock waves  
[NASA-CASE-XLE-04946] c17 N71-24911
- Electrical device for developing converging spherical shock waves  
[NASA-CASE-MPS-20890] c14 N72-22439
- Production of intermetallic compounds by effect of shock waves from explosions and compaction of powder  
[NASA-CASE-MPS-20861-1] c18 N73-32437

- Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c09 N75-11997
- Shock position sensor for supersonic inlets ---  
measuring pressure in the throat of a  
supersonic inlet  
[NASA-CASE-LEW-11915-1] c35 N76-14431
- SROES**
- Jet shoes for space locomotion  
[NASA-CASE-XLA-08491] c05 N69-21380
- SHORT CIRCUITS**
- Use of silicon controlled rectifier shorting  
circuit to protect thermoelectric generator  
source from thermal destruction  
[NASA-CASE-XGS-04808] c03 N69-25146
- Vacuum thermionic converter with short-circuited  
triodes and increased electron transmission  
and conversion efficiency  
[NASA-CASE-XLE-01015] c03 N69-39898
- Apparatus for automatically testing analog to  
digital converters for open and short circuits  
[NASA-CASE-XLA-06713] c14 N71-28991
- SHOT PEENING**
- Method of peening and portable peening gun  
[NASA-CASE-MPS-23047-1] c37 N76-18454
- SRROUNDS**
- Shrouded composite propulsion system configuration  
[NASA-CASE-XLA-01043] c28 N71-10780
- SHUTTERS**
- High speed shutter --- electrically actuated  
ribbon loop for shuttering optical or fluid  
passageways  
[NASA-CASE-ARC-10516-1] c23 N74-21300
- SIDEBANDS**
- Phase locked loop with sideband rejecting  
properties in continuous wave tracking radar  
[NASA-CASE-XNP-02723] c07 N70-41680
- SIDELobe REDUCTION**
- Multiple mode horn antenna with radiation  
pattern of equal beamwidths and suppressed  
sidelobes  
[NASA-CASE-XNP-01057] c07 N71-15907
- SIGNAL ANALYSIS**
- Design and development of signal detection and  
tracking apparatus  
[NASA-CASE-XGS-03502] c10 N71-20852
- Method and apparatus for a single channel  
digital communications system ---  
synchronization of received PCM signal by  
digital correlation with reference signal  
[NASA-CASE-NPO-11302-2] c07 N74-10132
- Differential phase shift keyed signal resolver  
[NASA-CASE-MSC-14066-1] c10 N74-27705
- Correlation type phase detector --- with time  
correlation integrator for frequency  
multiplexed signals  
[NASA-CASE-GSC-11744-1] c33 N75-26243
- SIGNAL ANALYZERS**
- Monitoring system for signal amplitude ranges  
over predetermined time interval  
[NASA-CASE-XMS-04061-1] c09 N69-39885
- Feedback controller for sampling error signals  
within single control formulation time interval  
[NASA-CASE-GSC-10554-1] c08 N71-29033
- Development of family of frequency to amplitude  
converters for frequency analysis of complex  
input signal waveforms  
[NASA-CASE-MSC-12395] c09 N72-25257
- Device for performing statistical time-series  
analysis of complex electrical signal waveforms  
[NASA-CASE-MSC-12428-1] c10 N73-25240
- Pulse stretcher for narrow pulses  
[NASA-CASE-MSC-14130-1] c10 N74-32711
- Speech analyzer --- which provides information  
regarding amplitude, frequency, and phase of a  
speech waveform  
[NASA-CASE-GSC-11898-1] c32 N75-22563
- Electronic optical transfer function analyzer  
[NASA-CASE-MPS-21672-1] c74 N76-19935
- SIGNAL DETECTION**
- Position locating system for remote aircraft  
using voice communication and digital signals  
[NASA-CASE-GSC-10087-2] c21 N71-13958
- Saturable magnetic core and signal detection for  
indicating impending saturation  
[NASA-CASE-ERC-10089] c23 N72-17747
- SIGNAL DETECTORS**
- Roughness detector for recording surface pattern  
of irregularities  
[NASA-CASE-XLA-00203] c14 N70-34161
- Electrical testing apparatus for detecting  
amplitude and width of transient pulse  
[NASA-CASE-XMP-06519] c09 N71-12519
- System for monitoring presence of neutrals in  
streams of ions - ion engine control  
[NASA-CASE-XNP-02592] c24 N71-20518
- Development of apparatus for generating output  
signal commensurate with information contained  
in input signal  
[NASA-CASE-ERC-10041] c08 N71-29138
- SIGNAL DISTORTION**
- Low distortion receiver for bi-level baseband  
PCM waveforms  
[NASA-CASE-MSC-14557-1] c32 N76-16249
- SIGNAL ENCODING**
- Adaptive compression signal processor for PCM  
communication systems  
[NASA-CASE-XLA-03076] c07 N71-11266
- SIGNAL GENERATORS**
- Plural recorder system which limits signal  
recording to signals of sufficient interest  
[NASA-CASE-XMS-06949] c09 N69-21467
- Alternating current signal generator providing  
plurality of amplitude modulated output signals  
[NASA-CASE-XNP-05612] c09 N69-21468
- Circuitry for generating sync signals in FM  
communication systems including video  
information  
[NASA-CASE-XNP-10830] c07 N71-11281
- Apparatus for generating microwave signals at  
progressively related phase angles for driving  
antenna array  
[NASA-CASE-ERC-10046] c10 N71-18722
- System generating sidereal frequency signals  
from signals of standard solar frequency  
without use of mixing operations or feedback  
loops  
[NASA-CASE-XGS-02610] c14 N71-23174
- Hand controller operable about three  
respectively perpendicular axes and capable of  
actuating signal generators for attitude  
control devices  
[NASA-CASE-XMS-07487] c15 N71-23255
- Voltage controlled oscillators and pulse  
amplitude modulation for signal ratio system  
[NASA-CASE-XMP-04367] c09 N71-23545
- Sampling circuit for signal processing in  
multiplex transmission by Fourier analysis  
[NASA-CASE-NPO-10388] c07 N71-24622
- Signaling summary alarm circuit with  
semiconductor switch for faulty contact  
indications  
[NASA-CASE-XLE-03061-1] c10 N71-24798
- Adaptive signal generating system and logic  
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[NASA-CASE-GSC-11367] c10 N71-26374
- Device for monitoring voltage by generating  
signal when voltages drop below predetermined  
value  
[NASA-CASE-KSC-10020] c10 N71-27338
- System for control of variable signal generator  
[NASA-CASE-NPO-11064] c07 N72-11150
- Digital function generator for generating any  
arbitrary single valued function  
[NASA-CASE-NPO-11104] c08 N72-22165
- Development of Hall effect transducer for  
converting mechanical shaft rotations into  
proportional electrical signals  
[NASA-CASE-LAR-10620-1] c09 N72-25255
- Multiterminal Gunn-type semiconductor microwave  
generator for producing stable signals  
[NASA-CASE-XER-07895] c26 N72-25679
- Audio frequency analysis circuit for  
determining, displaying, and recording  
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[NASA-CASE-NPO-11147] c14 N72-27408
- Digital servo control of random sound test  
excitation --- in reverberant acoustic chamber  
[NASA-CASE-NPO-11623-1] c23 N74-31148
- Signal conditioner test set  
[NASA-CASE-KSC-10750-1] c35 N75-12270
- System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c33 N75-19519
- Pseudo-noise test set for communication system  
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- Capacitive shaft encoder  
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- SIGNAL MIXING**
- Impedance transformation device for signal mixing  
[NASA-CASE-XGS-01110] c07 N69-24334
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- Adaptive compression signal processor for PCM communication systems  
[NASA-CASE-XLA-03076] c07 N71-11266
- Conversion system for transforming slow scan rate of Apollo TV camera on moon to fast scan of commercial TV  
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- Difference indicating circuit used in conjunction with device measuring gravitational fields  
[NASA-CASE-XNP-08274] c10 N71-13537
- Circuitry for developing autocorrelation function continuously within signal receiving period  
[NASA-CASE-XNP-00746] c07 N71-21476
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[NASA-CASE-XGS-02610] c14 N71-23174
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[NASA-CASE-XAC-10607] c10 N71-23669
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[NASA-CASE-NPO-10388] c07 N71-24622
- Video signal processing system for sampling video brightness levels  
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- Monopulse scanning network for scanning volumetric antenna pattern  
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- Processing system for semiperiodic electrical signals to produce real time contoured display  
[NASA-CASE-HSC-13407-1] c10 N72-20225
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[NASA-CASE-XNP-00748] c07 N70-36911
- Reflectometer for receiver input impedance match measurement  
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- Diversity receiving system with diversity phase lock  
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- Design and development of signal detection and tracking apparatus  
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- Development of optimum pre-detection diversity combining receiving system adapted for use with amplitude modulation, phase modulation, and frequency modulation systems  
[NASA-CASE-XGS-00740] c07 N71-23098
- Binary data decoding device for use at receiving end of communication channel  
[NASA-CASE-NPO-10118] c07 N71-24741
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[NASA-CASE-ERC-10275] c26 N72-25680
- Filter for third order phase locked loops in signal receivers  
[NASA-CASE-NPO-11941-1] c10 N73-27171
- Electromechanical actuator for producing mechanical force and/or motion in response to electrical signals  
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- Scan converting video tape recorder  
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## SIGNAL REFLECTION

Reflectometer for receiver input impedance match measurement  
[NASA-CASE-XNP-10843] c07 N71-11267

## SIGNAL STABILIZATION

Linear accelerator frequency control system  
[NASA-CASE-XGS-05441] c10 N71-22962  
Development of apparatus for generating output signal commensurate with information contained in input signal  
[NASA-CASE-ERC-10041] c08 N71-29138  
System for interference signal nulling by polarization adjustment  
[NASA-CASE-NPO-13140-1] c32 N75-24982

## SIGNAL TO NOISE RATIOS

Semiconductor in resonant cavity for improving signal to noise ratio of communication receiver  
[NASA-CASE-MSC-12259-1] c07 N70-12616  
Radar signal receiver arrangement for extending range and increasing signal to noise ratio  
[NASA-CASE-XNP-00748] c07 N70-36911  
Detector assembly for discriminating first signal with respect to presence or absence of second signal at time of occurrence of first signal  
[NASA-CASE-XNP-00701] c09 N70-40272  
Automatic estimation of signal to noise ratio and other parameters in signal communication systems  
[NASA-CASE-XNP-05254] c07 N71-20791  
Voltage controlled oscillators and pulse amplitude modulation for signal ratio system  
[NASA-CASE-XNP-04367] c09 N71-23545  
Design and characteristics of recording system for selective reprocessing and filtering of data to obtain optimum signal to noise ratios  
[NASA-CASE-ERC-10112] c07 N72-21119  
Development of idler feedback system to reduce electronic noise problem in two parametric amplifiers  
[NASA-CASE-LAR-10253-1] c09 N72-25258  
Superconductive resonant cavity for improved signal to noise ratio in communication signal  
[NASA-CASE-MSC-12259-2] c07 N72-33146  
Signal to noise ratio determination circuit using bandpass limiter  
[NASA-CASE-GSC-11239-1] c10 N73-25241  
Gated compressor, distortionless signal limiter  
[NASA-CASE-NPO-11820-1] c07 N74-19788

## SIGNAL TRANSMISSION

Synchronizing apparatus for multi-access satellite time division multiplex system  
[NASA-CASE-XGS-05918] c07 N69-39974  
Electro-mechanical circuit for converting floating intelligence signal to common electrically grounded intelligence recorder  
[NASA-CASE-XAC-00086] c09 N70-33182  
Demodulator for simultaneous demodulation of two modulating ac signal carriers close in frequency  
[NASA-CASE-XNP-01160] c07 N71-11298  
Bipolar phase detector and corrector for split phase PCM data signals  
[NASA-CASE-XGS-01590] c07 N71-12392  
Automatic estimation of signal to noise ratio and other parameters in signal communication systems  
[NASA-CASE-XNP-05254] c07 N71-20791  
Multiplexed communication system design including automatic correction of transmission errors introduced by frequency spectrum shifts  
[NASA-CASE-XNP-01306] c07 N71-20814  
Adaptive notch filter, using modulation techniques for reversed phase noise signal  
[NASA-CASE-XNP-01892] c10 N71-22986  
Pulse generator for synchronizing or resetting electronic signals without requiring separate external source  
[NASA-CASE-XGS-03632] c09 N71-23311  
Device for locating electrically nonlinear objects and determining distance to object by FM signal transmission  
[NASA-CASE-KSC-10108] c14 N73-25461  
Television multiplexing system, using single crystal controlled clock for signal synchronization  
[NASA-CASE-KSC-10654-1] c07 N73-30115  
Controlled oscillator system with a time dependent output frequency  
[NASA-CASE-NPO-11962-1] c09 N74-10194

Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12462-1] c07 N74-20809  
Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12494-1] c07 N74-20810  
Aircraft mounted crash activated transmitter device  
[NASA-CASE-MFS-16609-3] c09 N74-34647  
Digital transmitter for data bus communications system  
[NASA-CASE-MSC-14558-1] c32 N75-21486  
Modulator for tone and binary signals --- phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c32 N75-24981  
Rotating joint signal coupler  
[NASA-CASE-LAR-11264-1] c33 N75-27261  
Automatic transponder --- measurement of the internal delay time of a transponder  
[NASA-CASE-GSC-12075-1] c32 N76-19318

## SILANES

Preparation of elastomeric diamine silazane polymers  
[NASA-CASE-XNP-04133] c06 N71-20717  
Synthesis of high purity dianilinosilanes  
[NASA-CASE-XNP-06409] c06 N71-23230  
Process for preparing high molecular weight polyaryloxysilanes from lower molecular weight forms  
[NASA-CASE-XNP-08674] c06 N71-28807

## SILICATES

Ultraviolet radiation resistant alkali-metal silicate coatings for temperature control of spacecraft  
[NASA-CASE-XGS-04119] c18 N69-39979

## SILICIDES

Silicide coating process and composition for protection of refractory metals from oxidation  
[NASA-CASE-XLE-10910] c18 N71-29040  
Pused silicide coatings containing discrete particles for protecting niobium alloys --- used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c27 N76-16229

## SILICON

Method of forming thin window drifted silicon charged particle detector  
[NASA-CASE-XLE-00808] c24 N71-10560  
Gadolinium or samarium doped-silicon semiconductor material with resistance to radiation damage for use in solar cells  
[NASA-CASE-XLE-10715] c26 N71-23292  
Metal pattern bonding technique for cover glass attachment to silicon solar cells for space applications  
[NASA-CASE-XLE-08569] c03 N71-23449  
Low cost substrates for polycrystalline solar cells  
[NASA-CASE-GSC-12022-1] c44 N76-13597  
Covered silicon solar cells and method of manufacture --- with polymeric films  
[NASA-CASE-LEW-11065-2] c44 N76-14600

## SILICON CARBIDES

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[NASA-CASE-ERC-10120] c26 N69-33482  
Producing high purity silicon carbide on carbon base by hydrogen reduction of silicon tetrachloride  
[NASA-CASE-XLA-00158] c26 N70-36805  
Device for producing high purity silicon carbide on carbon base by hydrogen reduction of silicon tetrachloride  
[NASA-CASE-XLA-02057] c26 N70-40015

## SILICON COMPOUNDS

Doping silicon material with gadolinium to increase radiation resistance of solar cells  
[NASA-CASE-XLE-02792] c26 N71-10607  
Process for preparing disilanolols with in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979-2] c06 N73-32030

## SILICON CONTROLLED RECTIFIERS

Use of silicon controlled rectifier shorting circuit to protect thermoelectric generator source from thermal destruction  
[NASA-CASE-XGS-04808] c03 N69-25146  
Silicon controlled rectifier inverter with compensation of transients to avoid false gating  
[NASA-CASE-XLA-08507] c09 N69-39984

- Reversible ring counter using cascaded single silicon controlled rectifier stages  
[NASA-CASE-XGS-01473] c09 N71-10673
- Silicon controlled rectifier pulse gate amplifier for blocking false gating caused by negative transient voltages  
[NASA-CASE-XLA-07497] c09 N71-12514
- SILICON DIOXIDE**  
Intermittent type silica gel adsorption refrigerator for providing temperature control for spacecraft components  
[NASA-CASE-INP-00920] c15 N71-15906
- Nose cone mounted heat resistant antenna comprising plurality of adjacent layers of silica not introducing paths of high thermal conductivity through ablative shield  
[NASA-CASE-XMS-04312] c07 N71-22984
- Method and apparatus for stable silicon dioxide layers on silicon grown in silicon nitride ambient  
[NASA-CASE-ERC-10073-1] c06 N74-19769
- Ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c18 N74-30004
- SILICON FILMS**  
Deposition method for epitaxial beta SiC films having high degree of crystallographic perfection  
[NASA-CASE-ERC-10120] c26 N69-33482
- SILICON JUNCTIONS**  
Improving radiation resistance of silicon semiconductor junctions by doping with lithium  
[NASA-CASE-XGS-07801] c09 N71-12513
- SILICON NITRIDES**  
Method and apparatus for stable silicon dioxide layers on silicon grown in silicon nitride ambient  
[NASA-CASE-ERC-10073-1] c06 N74-19769
- Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c44 N76-14613
- SILICON RADIATION DETECTORS**  
Lithium drifted silicon radiation detector with gold rectifying contacts  
[NASA-CASE-XLE-10529] c14 N69-23191
- Silicon radiation detecting probe design for in vivo biomedical use  
[NASA-CASE-XMS-01177] c05 N71-19440
- SILICON TRANSISTORS**  
Vapor deposition method for forming metallized tungsten contacts on silicon substrates  
[NASA-CASE-GSC-10695-1] c09 N72-25259
- Development of method and apparatus for detecting surface ions on silicon diodes and transistors  
[NASA-CASE-ERC-10325] c15 N72-25457
- SILICONE RESINS**  
Technique for bonding --- process for molding silicone elastomer into fiberglass honeycomb panel  
[NASA-CASE-LAR-10073-1] c32 N74-23449
- SILICONIZING**  
Vapor deposited laminated nitride-silicon coating for corrosion prevention of carbonaceous surfaces  
[NASA-CASE-XLA-00284] c15 N71-16075
- SILOXANES**  
Synthesis of siloxane containing epoxy polymers with low dielectric properties  
[NASA-CASE-MPS-13994-1] c06 N71-11240
- Method for producing alternating ether-siloxane copolymers with stable properties when exposed to elevated temperatures and UV radiation  
[NASA-CASE-XMP-02584] c06 N71-20905
- Synthesis of siloxane containing epoxide and diamine polymers  
[NASA-CASE-MPS-13994-2] c06 N72-25148
- Silphenylenesiloxane polymer with in-chain perfluoroalkyl groups  
[NASA-CASE-MPS-20979] c06 N72-25151
- Fluid polydimethylsiloxane resin with low outgassing properties in cured state  
[NASA-CASE-GSC-11358-1] c06 N73-26100
- SILVER**  
Dry electrode manufacture, using silver powder with cement  
[NASA-CASE-FRC-10029-2] c05 N72-25121
- SILVER ALLOYS**  
Brazing alloy composition  
[NASA-CASE-XMP-06053] c26 N75-27126
- SILVER CHLORIDES**  
Electrochemically reversible silver-silver chloride electrode for detecting bioelectric potential differences generated by human muscles and organs  
[NASA-CASE-XMS-02872] c05 N69-21925
- Silver chloride use in technique for fusion bonding of graphite to silver, glass, ceramics, and certain other metals  
[NASA-CASE-XGS-00963] c15 N69-39735
- SILVER COMPOUNDS**  
Description of electrical equipment and system for purification of waste water by producing silver ions for bacterial control  
[NASA-CASE-MSC-10960-1] c03 N71-24718
- SILVER ZINC BATTERIES**  
Elimination of two step voltage discharge property of silver zinc batteries by using divalent silver oxide capacity of cell to charge anodes to monovalent silver state  
[NASA-CASE-XGS-01674] c03 N71-29129
- SIMULATORS**  
Development of apparatus for simulating zero gravity conditions  
[NASA-CASE-MPS-12750] c27 N71-16223
- Phonocardiogram simulator producing electrical voltage waves to control amplitude and duration between simulated sounds  
[NASA-CASE-XKS-10804] c05 N71-24606
- Sign wave generation simulator for variable amplitude, frequency, damping, and phase pulses for oscilloscope display  
[NASA-CASE-NPO-10251] c10 N71-27365
- Simulator for practicing the mating of an observer-controlled object with a target  
[NASA-CASE-MPS-23052-1] c09 N75-25965
- SINE SERIES**  
Service life of electromechanical device for generating sine/cosine functions  
[NASA-CASE-LAR-10503-1] c09 N72-21248
- Function generators for producing complex vibration mode patterns used to identify vibration mode data  
[NASA-CASE-LAR-10310-1] c10 N73-20253
- SINE WAVES**  
Sign wave generation simulator for variable amplitude, frequency, damping, and phase pulses for oscilloscope display  
[NASA-CASE-NPO-10251] c10 N71-27365
- Wideband generator for producing sine wave quadrature and second harmonic of input signal  
[NASA-CASE-NPO-11133] c10 N72-20223
- Brushless electromechanical generator for sine and cosine functions  
[NASA-CASE-LAR-11389-1] c09 N73-32121
- SINGLE CRYSTALS**  
Producing high purity silicon carbide on carbon base by hydrogen reduction of silicon tetrachloride  
[NASA-CASE-XLA-00158] c26 N70-36805
- Single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c09 N72-22199
- Growth of gallium nitride crystals  
[NASA-CASE-LAR-11302-1] c25 N75-13054
- Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c35 N75-13213
- Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c25 N75-26043
- Method of crystallization --- for semiconductor materials used to manufacture electronic components  
[NASA-CASE-MPS-23001-1] c76 N75-32928
- A method and apparatus for continuously processing a single crystalline ribbon in a reduced gravity environment  
[NASA-CASE-MPS-23002-1] c76 N76-13934
- SINTERING**  
Condenser-separator for dehumidifying air utilizing sintered metal surface  
[NASA-CASE-XLA-08645] c15 N69-21465
- Production of refractory bodies with controlled porosity by pressing and heating mixtures of refractory and inert metal powders  
[NASA-CASE-LEW-10393-1] c17 N71-15468
- SIZE (DIMENSIONS)**  
Development of apparatus for producing metal powder particles of controlled size  
[NASA-CASE-XLE-06461-2] c17 N72-28535

# SIZE DETERMINATION

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## SIZE DETERMINATION

Impact measuring technique for determining size of hypervelocity projectiles  
[NASA-CASE-LAR-10913] c14 N72-16282

## SIZE SEPARATION

Method and apparatus for precision sizing and joining of large diameter tubes by bulging or constricting overlapping ends  
[NASA-CASE-XMP-05114-2] c15 N71-26148

Device which separates and screens particles of soil samples for vidicon viewing in vacuum and reduced gravity environments  
[NASA-CASE-XNP-09770-3] c11 N71-27036

## SIZING (SHAPING)

Method and apparatus for shaping and joining large diameter metal tubes using magnetomotive forces  
[NASA-CASE-XMP-05114] c15 N71-17650

## SIZING SCREENS

Method for making screen with unlimited fineness of mesh and screen thickness  
[NASA-CASE-XLE-00953] c15 N71-15966

Screen particle separator for soil samples  
[NASA-CASE-XNP-09770-2] c15 N72-22483

## SKEWNESS

Tape guidance system for multichannel digital recording system  
[NASA-CASE-XNP-09453] c08 N71-19420

Automatic character skew and spacing checking network --- of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c33 N76-18353

## SKID LANDINGS

Nose gear steering system for vehicles with main skids to provide directional stability after loss of aerodynamic control  
[NASA-CASE-XLA-01804] c02 N70-34160

## SKIN (ANATOMY)

Conditioning tanned sharkskin for use as abrasive resistant clothing  
[NASA-CASE-XMS-09691-1] c18 N71-15545

Percutaneous connector device --- for transporting external electrical signals to internal body parts  
[NASA-CASE-RSC-10849-1] c54 N76-19816

## SKIN (STRUCTURAL MEMBER)

Development of resilient fastener for attaching skin of aerospace vehicles to permit movement of skin relative to framework  
[NASA-CASE-XLA-01027] c31 N71-24035

## SKIN TEMPERATURE (BIOLOGY)

Thermistor holder for skin temperature measurements  
[NASA-CASE-ARC-10855-1] c52 N75-33642

## SKIN TEMPERATURE (NON-BIOLOGICAL)

Heat flux sensor adapted for mounting on aircraft or spacecraft to measure aerodynamic heat flux inflow to aircraft skin  
[NASA-CASE-IFR-03802] c33 N71-23085

## SKIRTS

Inflatable rocket engine nozzle skirt with transpiration cooling  
[NASA-CASE-MFS-20619] c28 N72-11708

## SKY

Camera arrangement --- for satellite scanning of earth or sky  
[NASA-CASE-GSC-12032-2] c35 N76-19408

## SLEEP

Development of apparatus and method for quantitatively measuring brain activity as automatic indication of sleep state and level of consciousness  
[NASA-CASE-MSC-13282-1] c05 N71-24729

## SLEEVES

Nonreusable energy absorbing device comprising ring member with plurality of recesses, cutting members, and guide member mounted in each recess  
[NASA-CASE-XMP-10040] c15 N71-22877

System for enhancing tool-exchange capabilities of a portable wrench  
[NASA-CASE-MFS-22283-1] c37 N75-33395

## SLENDER BODIES

Support techniques for restraint of slender bodies such as launch vehicles  
[NASA-CASE-XLA-02704] c11 N69-21540

## SLIDING CONTACT

Electrical connector pin with wiping action to assure reliable contact  
[NASA-CASE-XMP-04238] c09 N69-39734

Development of slip ring assembly with inner and outer peripheral surfaces used as electrical contacts for brushes  
[NASA-CASE-XNP-01049] c15 N71-23049

## SLIP CASTING

Freeze casting of metal ceramic and refractory compound powders into plastic slips  
[NASA-CASE-XLE-00106] c15 N71-16076

## SLITS

Slit regulated gas journal bearing  
[NASA-CASE-XNP-00476] c15 N70-38620

Method of fabricating an object with a thin wall having a precisely shaped slit  
[NASA-CASE-LAR-10409-1] c15 N74-21059

## SLOT ANTENNAS

Planar array circularly polarized antenna with wall slot excitation  
[NASA-CASE-NPO-10301] c07 N72-11148

Omnidirectional antenna array with circumferential slots for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c09 N72-25247

Circularly polarized antenna with linearly polarized pair of elements  
[NASA-CASE-ERC-10214] c09 N72-31235

Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c09 N74-20864

Horn antenna having V-shaped corrugated slots  
[NASA-CASE-LAR-11112-1] c32 N76-15330

## SLOTS

Belleville spring assembly with elastic guides having low hysteresis  
[NASA-CASE-XNP-09452] c15 N69-27504

Direct lift control system having flaps with slots adjacent to their leading edge and particularly adapted for lightweight aircraft  
[NASA-CASE-LAR-10249-1] c02 N71-26110

Slotted fine-adjustment support for optical devices  
[NASA-CASE-MFS-20249] c15 N72-11386

## SLURRY PROPELLANTS

Apparatus for producing hydrocarbon slurry containing small particles of magnesium for use as jet aircraft fuel  
[NASA-CASE-XLE-00010] c15 N70-33382

## SMOKE

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[NASA-CASE-XNP-01310] c33 N71-28852

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[NASA-CASE-LAR-11669-1] c34 N76-13419

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## SMOKE TRAILS

Smoke generator  
[NASA-CASE-ARC-10905-1] c31 N75-33278

## SODIUM CHLORIDES

Composition of diffuse reflective coating containing sodium chloride in combination with diol solvent and organic wetting and drying agents  
[NASA-CASE-GSC-11214-1] c06 N73-13128

## SOFT LANDING

Non-reusable kinetic energy absorber for application in soft landing of space vehicles  
[NASA-CASE-XLE-00810] c15 N70-34861

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[NASA-CASE-XMP-02108] c31 N70-36845

Payload soft landing system using stowable gas bag  
[NASA-CASE-XLA-09881] c31 N71-16085

## SOFT LANDING SPACECRAFT

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[NASA-CASE-XMP-03856] c31 N70-34159

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[NASA-CASE-XNP-05530] c14 N73-32321

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## SOLAR ACTIVITY

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[NASA-CASE-XGS-08269] c23 N71-26206
- SPECTRUM ANALYSIS**  
Spectrometer using photoelectric effect to obtain spectral data  
[NASA-CASE-XNP-04161] c14 N71-15599  
Emission spectroscopy method for contamination monitoring of inert gas metal arc welding  
[NASA-CASE-XNP-02039] c15 N71-15871  
Method and apparatus for high resolution power spectrum analysis  
[NASA-CASE-NPO-10748] c08 N72-20177  
Real time analysis of voiced sounds  
[NASA-CASE-NPO-13465-1] c71 N75-13593
- SPEECH RECOGNITION**  
Speech analyzer --- which provides information regarding amplitude, frequency, and phase of a speech waveform  
[NASA-CASE-GSC-11898-1] c32 N75-22563
- SPEED CONTROL**  
System for maintaining motor at predetermined speed using digital pulses  
[NASA-CASE-XNP-06892] c09 N71-24805  
Optimal control system for automatic speed regulation of electric driven motor vehicle  
[NASA-CASE-NPO-11210] c11 N72-20244  
Two speed drive system --- mechanical device for changing speed on rotating vehicle wheel  
[NASA-CASE-MFS-20645-1] c15 N74-23070  
Low speed phaselock speed control system --- for brushless dc motor  
[NASA-CASE-GSC-11127-1] c09 N75-24758
- SPEED REGULATORS**  
Feedback control for direct current motor to achieve constant speed under varying loads  
[NASA-CASE-MFS-14610] c09 N71-28886
- SPHERES**  
Guidance analyzer having suspended spacecraft simulating sphere for astronavigation  
[NASA-CASE-XNP-09572] c14 N71-15621  
Plastic sphere for radar tracking and calibration  
[NASA-CASE-XLA-11154] c07 N72-21117
- SPHERICAL SHELLS**  
Hollow spherical electrode for shielding dielectric junction between high voltage conductor and insulator  
[NASA-CASE-XLB-03778] c09 N69-21542  
Development of mechanical device for measuring distance of point within sphere from surface of sphere  
[NASA-CASE-XLA-06683] c14 N72-28436
- SPHERICAL TANKS**  
Gauge for measuring quantity of liquid in spherical tank in reduced gravity  
[NASA-CASE-XMS-06236] c14 N71-21007
- SPHERICAL WAVES**  
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## SPIKE NOZZLES

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- spherical shock waves  
[NASA-CASE-MFS-20890] c14 N72-22439
- SPIKE NOZZLES**  
Constructing fluid spike nozzle to eliminate heat transfer and high temperature problems inherent in physical spikes  
[NASA-CASE-XGS-01143] c31 N71-15647
- SPIN DYNAMICS**  
Nutation damper for use on spinning body  
[NASA-CASE-GSC-11205-1] c15 N73-25513
- SPIN REDUCTION**  
Optical scanner mounted on rotating support structure with method of compensating for image or satellite rotation  
[NASA-CASE-XGS-02401] c14 N69-27485  
Bolt-latch mechanism for releasing despin weights from space vehicle  
[NASA-CASE-XLA-00679] c15 N70-38601  
Stretch Yo-Yo mechanism for reducing initial spin rate of space vehicle  
[NASA-CASE-XGS-00619] c30 N70-40016  
Stage separation system for spinning vehicles and payloads  
[NASA-CASE-XLA-02132] c31 N71-10582  
Flexible turnstile antenna system for reducing nutation in spin-oriented satellites  
[NASA-CASE-XMP-00442] c31 N71-10747
- SPIN STABILIZATION**  
Dynamic precession damping of spin-stabilized vehicles by using rate gyroscope and angular accelerometer  
[NASA-CASE-XLA-01989] c21 N70-34295  
Attitude orientation control of spin stabilized final stage space vehicles, using horizon scanners  
[NASA-CASE-XLA-00281] c21 N70-36943  
Attitude detection system using stellar references for three-axis control and spin stabilized spacecraft  
[NASA-CASE-XGS-03431] c21 N71-15642  
Spin phase synchronization of cartwheel satellite in polar orbit  
[NASA-CASE-XGS-05579] c31 N71-15676  
High velocity guidance and spin stabilization gyro controlled jet reaction system for launch vehicle payloads  
[NASA-CASE-XLA-01339] c31 N71-15692  
Passive dual spin misalignment compensators --- gyro-stabilized device  
[NASA-CASE-GSC-11479-1] c21 N74-28097  
Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c02 N74-30421
- SPIRAL WRAPPING**  
Adjustable spiral wire winding device  
[NASA-CASE-XMS-02383] c15 N71-15918
- SPIRALS (CONCENTRATORS)**  
Spiral groove seal --- for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c15 N74-10474
- SPIROMETERS**  
Compact bellows spirometer for high speed and high altitude space travel  
[NASA-CASE-XAR-01547] c05 N69-21473
- SPLINTS**  
Stretcher with rigid head and neck support with capability of supporting immobilized person in vertical position for removal from vehicle hatch to exterior also useful as splint stretcher  
[NASA-CASE-XMP-06589] c05 N71-23159
- SPORES**  
Lyophilized spore dispenser  
[NASA-CASE-LAR-10544-1] c15 N74-13178
- SPOT WELDS**  
Controlled arc spot welding method  
[NASA-CASE-XMP-00392] c15 N70-34814  
Automatic closed circuit television arc guidance control for welding joints  
[NASA-CASE-MFS-13046] c07 N71-19433  
Electric resistance spot welding and brazing for producing metal bonds with superior mechanical and structural characteristics  
[NASA-CASE-LAR-11072-1] c15 N73-20535
- SPRAYED COATINGS**  
Plasma spraying gun for forming diffusion bonded metal or ceramic coatings on substrates  
[NASA-CASE-XLE-01604-2] c15 N71-15610
- Production and application of sprayable fiber reinforced ablation material  
[NASA-CASE-XLA-04251] c18 N71-26100  
Metal plating process employing spraying of metallic power/peening particle mixture  
[NASA-CASE-GSC-11163-1] c15 N73-32360
- SPRAYERS**  
External device for liquid spray cooling of gas turbine blades  
[NASA-CASE-XLE-00037] c28 N70-33372  
Adhesive spray process for attaching biomedical skin electrodes  
[NASA-CASE-XFP-07658-1] c05 N71-26293  
Apparatus for liquid spray cooling of turbine blades  
[NASA-CASE-XLE-00027] c33 N71-29152  
Closed loop spray cooling apparatus --- for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c37 N76-20486
- SPRAYING**  
Aircraft wheel spray drag alleviator for dual tandem landing gear  
[NASA-CASE-XLA-01583] c02 N70-36825
- SPREADING**  
Tool attachment for spreading or moving away loose elements from terminal posts during winding of filamentary elements  
[NASA-CASE-XMP-02107] c15 N71-10809
- SPRINGS (ELASTIC)**  
Bellefonte spring assembly with elastic guides having low hysteresis  
[NASA-CASE-XNP-09452] c15 N69-27504  
Multiple Bellefonte spring assembly with even load distribution  
[NASA-CASE-XNP-00840] c15 N70-38225  
Switching mechanism with energy stored in coil spring  
[NASA-CASE-XGS-00473] c03 N70-38713  
Load cell protection device using spring-loaded breakaway mechanism  
[NASA-CASE-XMS-06782] c32 N71-15974  
Vibration isolation system, using coaxial helical compression springs  
[NASA-CASE-NPO-11012] c15 N72-11391  
Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c37 N76-11441
- SPUTTERING**  
Deposition method for epitaxial beta SiC films having high degree of crystallographic perfection  
[NASA-CASE-ERC-10120] c26 N69-33482  
Development of procedure for producing thin transparent films of zinc oxide on transparent refractory substrate  
[NASA-CASE-FRC-10019] c15 N73-12487  
Technique and equipment for sputtering using apertured electrode and pulsed substrate bias  
[NASA-CASE-LEW-01920-1] c17 N73-24569  
Sputtering holes with ion beamlets  
[NASA-CASE-LEW-11646-1] c28 N74-31269  
Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c37 N75-19684
- SQUARE WAVES**  
High speed phase detector design indicating phase relationship between two square wave input signals  
[NASA-CASE-XNP-01306-2] c09 N71-24596
- SQUARES (MATHEMATICS)**  
Apparatus for computing square roots  
[NASA-CASE-XGS-04768] c08 N71-19437
- SQUIBS**  
Contamination free separation nut eliminating combustion products from ambient surroundings generated by squib firing  
[NASA-CASE-XGS-01971] c15 N71-15922
- STABILITY TESTS**  
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[NASA-CASE-MFS-21455-1] c16 N74-15146
- STABILIZATION**  
Electro-optical stabilization of calibrated light source  
[NASA-CASE-MSC-12293-1] c14 N72-27411  
System for controlling torque buildup in suspension of gondola connected to balloon by parachute shroud lines  
[NASA-CASE-GSC-11077-1] c02 N73-13008

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# STATIC PRESSURE

- Development of aerodynamic control system to control flutter over large range of oscillatory frequencies using stability augmentation techniques  
[NASA-CASE-LAR-10682-1] c02 N73-26004
- Radiation hardening of MOS devices by boron --- for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c76 N75-25730
- STABILIZED PLATFORMS**  
Hydraulic drive mechanism for leveling isolation platforms  
[NASA-CASE-XMS-03252] c15 N71-10658
- STABILIZERS**  
Design and development of satellite despinn device  
[NASA-CASE-XMP-08523] c31 N71-20396
- STABILIZERS (AGENTS)**  
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[NASA-CASE-NPO-12000] c27 N72-25699
- STABILIZERS (FLUID DYNAMICS)**  
Assembly for opening flight capsule stabilizing and decelerating flaps with reference to capsule recovery  
[NASA-CASE-XMP-00641] c31 N70-36410  
Mechanical stabilization system for VTOL aircraft  
[NASA-CASE-XLA-06339] c02 N71-13422  
Attitude stabilizer for nonguided missile or vehicle with respect to trajectory  
[NASA-CASE-ARC-10134] c30 N72-17873  
Inflatable stabilizing system for use on life raft to reduce rocking and preclude capsizing  
[NASA-CASE-MSC-12393-1] c02 N73-26006  
Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MPS-19194-1] c37 N76-14460
- STABLE OSCILLATIONS**  
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[NASA-CASE-XMS-05562-1] c09 N69-39986
- STACKS**  
Remote fire stack igniter --- with solenoid-controlled valve  
[NASA-CASE-MPS-21675-1] c33 N74-33378
- STAGE SEPARATION**  
Stage separation using remote control release of joint with explosive insert  
[NASA-CASE-XLA-02854] c15 N69-27490  
Piezoelectric means for missile stage separation indication and stage initiation  
[NASA-CASE-XLA-00791] c03 N70-39930  
Space vehicle stage coupling and quick release separation mechanism  
[NASA-CASE-XLA-01441] c15 N70-41679  
Stage separation system for spinning vehicles and payloads  
[NASA-CASE-XLA-02132] c31 N71-10582  
Payload/spent rocket engine case separation system  
[NASA-CASE-XLA-05369] c31 N71-15687  
Separation mechanism for use between stages of multistage rocket vehicles  
[NASA-CASE-XLA-00188] c15 N71-22874  
Development of remotely controlled shaped charge for lateral displacement of rocket stages after separation  
[NASA-CASE-XLA-04804] c31 N71-23008  
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[NASA-CASE-XKS-04631] c10 N71-23663  
Frangible connecting link suitable for rocket stage separation  
[NASA-CASE-MSC-11849-1] c15 N72-22488
- STAGNATION PRESSURE**  
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[NASA-CASE-XPR-02007] c12 N71-24692  
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[NASA-CASE-LAR-11139-1] c14 N74-32878
- STAGNATION TEMPERATURE**  
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[NASA-CASE-XLE-00266] c14 N70-34156
- STAINING**  
Automated single-slide staining device  
[NASA-CASE-LAR-11649-1] c51 N76-13725
- STAINLESS STEELS**  
Joining aluminum to stainless steel by bonding aluminum coatings onto titanium coated stainless steel and brazing aluminum to aluminum/titanium coated steel  
[NASA-CASE-MPS-07369] c15 N71-20443  
Ultrasonic scanning system for in-place inspection of brazed tube joints  
[NASA-CASE-MPS-20767-1] c15 N74-15130  
Method of forming a wick for a heat pipe  
[NASA-CASE-NPO-13391-1] c33 N74-19584
- STAR TRACKERS**  
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[NASA-CASE-XNP-01307] c21 N70-41856  
Sun tracker with rotatable plane-parallel plate and two photocells  
[NASA-CASE-XGS-01159] c21 N71-10678  
Photonmultiplier detector of Canopus for spacecraft attitude control  
[NASA-CASE-XNP-03914] c21 N71-10771  
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[NASA-CASE-XGS-03431] c21 N71-15642  
Relay controlled voltage switching unit for scanning circuitry of star tracker  
[NASA-CASE-NPO-11253] c09 N72-17157  
Method for producing reticles for use in outer space  
[NASA-CASE-GSC-11188-2] c21 N73-19630  
Production method of star tracking reticles for transmitting in visible and near ultraviolet regions  
[NASA-CASE-GSC-11188-1] c14 N73-32320  
Strapped down gyroscope aligned with sun and star tracker optical axis calibrating roll, yaw and pitch values  
[NASA-CASE-ARC-10716-1] c31 N73-32784  
Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c14 N74-20008  
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[NASA-CASE-GSC-11569-1] c14 N74-30886  
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[NASA-CASE-MPS-23267-1] c44 N76-18679
- STARK EFFECT**  
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[NASA-CASE-LAR-11352-1] c33 N75-26245  
Stark-effect modulation of CO2 laser with NH2D  
[NASA-CASE-NPO-11945-1] c36 N76-18427
- STARTERS**  
Starting circuit design for initiating and maintaining arcs in vapor lamps  
[NASA-CASE-XNP-01058] c09 N71-12540  
Motor run-up system --- power lines  
[NASA-CASE-NPO-13374-1] c33 N75-19524
- STATIC FRICTION**  
Kinetic and static friction force measurement between magnetic tape and magnetic head surfaces  
[NASA-CASE-XNP-08680] c14 N71-22995  
Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c09 N75-25966
- STATIC INVERTERS**  
Describing static inverter with single or multiple phase output  
[NASA-CASE-XMP-00663] c08 N71-18752  
Development and characteristics of oscillating static inverter  
[NASA-CASE-XGS-05289] c09 N71-19470
- STATIC LOADS**  
Measuring shear-creep compliance of solid and liquid materials used in spacecraft components  
[NASA-CASE-XLE-01481] c14 N71-10781  
Apparatus for measuring load on cable under static or dynamic conditions comprising pulleys pivoting structure against restraint of tension strap  
[NASA-CASE-XMS-04545] c15 N71-22878
- STATIC PRESSURE**  
Pressure probe for sensing ambient static air pressures  
[NASA-CASE-XLA-00481] c14 N70-36824  
Ambient atmospheric pressure sensing device for determining altitude of flight vehicles  
[NASA-CASE-XLA-00128] c15 N70-37925  
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[NASA-CASE-LAR-11552-1] c35 N76-14429

## STATIONKEEPING

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## STATIONKEEPING

Method of stationkeeping for lenticular gravity  
gradient satellites  
[NASA-CASE-XLA-03132] c31 N71-22969

## STATISTICAL CORRELATION

Optical sensing of supersonic flows by  
correlating deflections in laser beams through  
flow  
[NASA-CASE-MPS-20642] c14 N72-21407

## STEADY STATE

Steady state thermal radiometers  
[NASA-CASE-MPS-21108-1] c14 N74-27861

## STEAM TURBINES

Vapor generating boiler system for turbine motor  
[NASA-CASE-XLE-00785] c33 N71-16104

## STEELS

Zinc dust formulation for abrasion resistant  
steel coatings  
[NASA-CASE-GSC-10361-1] c18 N72-23581

## STEERABLE ANTENNAS

Apparatus for generating microwave signals at  
progressively related phase angles for driving  
antenna array  
[NASA-CASE-ERC-10046] c10 N71-18722  
Satellite radio communication system with remote  
steerable antenna  
[NASA-CASE-XNP-02389] c07 N71-28900  
Amplitude steered array  
[NASA-CASE-GSC-11446-1] c09 N74-20860

## STEERING

Steerable solid propellant rocket motor adapted  
to effect payload orientation as multistage  
rocket stage or reduce velocity as retrorocket  
[NASA-CASE-XNP-00234] c28 N70-38645

## STELLAR LUMINOSITY

Development of star intensity measuring system  
which minimizes effects of outside interference  
[NASA-CASE-XNP-06510] c14 N71-23797

## STELLAR SPECTRA

Development of star intensity measuring system  
which minimizes effects of outside interference  
[NASA-CASE-XNP-06510] c14 N71-23797

## STEREOPHOTOGRAPHY

Stereo photomicrography system with stereo  
microscope for viewing specimen at various  
magnifications  
[NASA-CASE-LAR-10176-1] c14 N72-20380  
Field sequential stereo television  
[NASA-CASE-MSC-12616-1] c07 N74-32601

## STEREOSCOPIC VISION

Stereoscopic television system, including  
projecting pair of binocular images  
[NASA-CASE-ARC-10160-1] c23 N72-27728

## STERILIZATION

Using ethylene oxide in preparation of  
sterilized solid rocket propellants and  
encapsulating materials  
[NASA-CASE-XNP-01749] c27 N70-41897  
Ethylene oxide sterilization and encapsulating  
process for sterile preservation of  
instruments and solid propellants  
[NASA-CASE-XNP-09763] c14 N71-20461  
Environmentally controlled suit for working in  
sterile chamber  
[NASA-CASE-LAR-10076-1] c05 N73-20137  
Protein sterilization of firefly luciferase  
without denaturation  
[NASA-CASE-GSC-10225-1] c06 N73-27086  
Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c54 N75-27761

## STERILIZATION EFFECTS

Reliability of electrical connectors after heat  
sterilization  
[NASA-CASE-NPO-10694] c09 N72-20200

## STIMULATED EMISSION

Repetitively pulsed wavelength selective carbon  
dioxide laser  
[NASA-CASE-ERC-10178] c16 N71-24832

## STIRLING CYCLE

Stirling cycle engine and refrigeration systems  
[NASA-CASE-NPO-13613-1] c37 N75-22747

## STIRRING

Design of mechanical device for stirring several  
test tubes simultaneously  
[NASA-CASE-XAC-06956] c15 N71-21177

## STORAGE

Design and development of fluid sample collector  
[NASA-CASE-XMS-06767-1] c14 N71-20435

## STORAGE BATTERIES

Leak resistant bonded elastomeric seal for  
secondary electrochemical cells  
[NASA-CASE-XGS-02631] c03 N71-23006  
Automatically charging battery of electric  
storage cells  
[NASA-CASE-XNP-04758] c03 N71-24605  
Elimination of two step voltage discharge  
property of silver zinc batteries by using  
divalent silver oxide capacity of cell to  
charge anodes to monovalent silver state  
[NASA-CASE-XGS-01674] c03 N71-29129  
Electric storage battery with high impact  
resistance  
[NASA-CASE-NPO-11021] c03 N72-20032  
Electrically rechargeable redox flow cell  
[NASA-CASE-LEW-12220-1] c44 N75-32586  
Hydrogen-bromine secondary battery  
[NASA-CASE-NPO-13237-1] c44 N76-18641

## STORAGE STABILITY

Storage stable, thermally activated foaming  
compositions for erecting and rigidizing  
mechanisms of thin sheet solar collectors  
[NASA-CASE-LAR-10373-1] c18 N71-26155

## STORAGE TANKS

Expulsion bladder equipped storage tank structure  
[NASA-CASE-XNP-00612] c11 N70-38182  
Development of apparatus and method for testing  
leakage of large tanks  
[NASA-CASE-XNP-02392] c32 N71-24285

## STRAIN GAGE ACCELEROMETERS

Accelerometer with FM output signals indicative  
of mechanical strain on it  
[NASA-CASE-XLA-00492] c14 N70-34799  
Strain gage accelerometer for angular  
acceleration measurement  
[NASA-CASE-XMS-05936] c14 N70-41682

## STRAIN GAGE BALANCES

Self-balancing strain gage transducer with  
bridge circuit  
[NASA-CASE-MPS-12827] c14 N71-17656

## STRAIN GAGES

Semiconductor p-n junction on needle apex to  
provide stress and strain sensor  
[NASA-CASE-XLA-04980] c09 N69-27422  
Apparatus for forming wire grids for electric  
strain gages  
[NASA-CASE-XLE-00023] c15 N70-33330  
Force measuring instrument for structural  
members, particularly fastening bolts or studs  
[NASA-CASE-XNP-00456] c14 N70-34705  
Difference indicating circuit used in  
conjunction with device measuring  
gravitational fields  
[NASA-CASE-XNP-08274] c10 N71-13537  
Water cooled gage for strain measurements in  
high temperature environments  
[NASA-CASE-XNP-09205] c14 N71-17657  
Development of apparatus for measuring  
successive increments of strain on elastomers  
[NASA-CASE-XNP-04680] c15 N71-19489  
Strain gage measurement of elongation due to  
thermally and mechanically induced stresses  
[NASA-CASE-IGS-04478] c14 N71-24233  
Method for temperature compensating  
semiconductor gages by exposure to high energy  
radiation  
[NASA-CASE-XLA-04555-1] c14 N71-25892  
Pulsed excitation voltage circuit for strain  
gage bridge transducers  
[NASA-CASE-FRC-10036] c09 N72-22200  
Method for making semiconductor p-n junction  
stress and strain sensor  
[NASA-CASE-XLA-04980-2] c14 N72-28438  
Device for monitoring a change in mass in  
varying gravimetric environments  
[NASA-CASE-MPS-21556-1] c14 N74-26945  
Strain gage ambiguity sensor for segmented  
mirror active optical system  
[NASA-CASE-MPS-20506-1] c35 N75-12273  
High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c35 N75-13227  
Subminiature insertable force transducer ---  
including a strain gage to measure forces in  
muscles  
[NASA-CASE-NPO-13423-1] c33 N75-31329  
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[NASA-CASE-LAR-11263-1] c35 N75-33369

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## SUBMINIATURIZATION

- Strain gage mounting assembly  
[NASA-CASE-NPO-13170-1] c35 N76-14430
- Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648] c35 N76-16396
- STRAIN RATE**  
Process for analysis of strain field of structures subjected to large deformations involving low modulus substrate with thin coating  
[NASA-CASE-LAR-10765-1] c32 N73-20740
- STRAPDOWN INERTIAL GUIDANCE**  
Strapped down gyroscope aligned with sun and star tracker optical axis calibrating roll, yaw and pitch values  
[NASA-CASE-ARC-10716-1] c31 N73-32784
- STRAPS**  
Meter for use in detecting tension in straps having predetermined elastic characteristics  
[NASA-CASE-MPS-22189-1] c35 N75-19615
- STRESS ANALYSIS**  
Development of system for measuring damping characteristics of structure or system subjected to random forces or influences  
[NASA-CASE-ARC-10154-1] c14 N72-22440  
Process for analysis of strain field of structures subjected to large deformations involving low modulus substrate with thin coating  
[NASA-CASE-LAR-10765-1] c32 N73-20740  
High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c35 N75-13227
- STRESS CONCENTRATION**  
Self-supporting strain transducer  
[NASA-CASE-LAR-11263-1] c35 N75-33369
- STRESS CORROSION**  
Method to prevent stress corrosion cracking in titanium alloys  
[NASA-CASE-NPO-10271] c17 N71-16393  
Method and apparatus for inducing compressive stresses in pressure vessel to prevent stress corrosion  
[NASA-CASE-XLA-07390] c15 N71-18616
- STRESS MEASUREMENT**  
Semiconductor p-n junction on needle apex to provide stress and strain sensor  
[NASA-CASE-XLA-04980] c09 N69-27422  
Force measuring instrument for structural members, particularly fastening bolts or studs  
[NASA-CASE-XMF-00456] c14 N70-34705  
Self-balancing strain gage transducer with bridge circuit  
[NASA-CASE-MPS-12827] c14 N71-17656  
Servocontrol system for measuring local stresses at geometric discontinuity in stressed material  
[NASA-CASE-XLA-08530] c32 N71-25360  
Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c35 N76-13460  
Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648] c35 N76-16396
- STRESS RELIEVING**  
Nut and bolt fastener permitting all-directional movement of skin sections with respect to supporting structure  
[NASA-CASE-XLA-01807] c15 N71-10799
- STRESSES**  
Tape recorder designed for low power consumption and resistance to operational failure under high stress conditions  
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digital data in high density format on  
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by tracking bodies reentering atmosphere at  
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[NASA-CASE-LEW-12083-1] c26 N76-18262
- THIN PLATES**
- Dichroic plate --- as bandpass filters  
[NASA-CASE-NPO-13506-1] c35 N76-15435
- THIN WALLED SHELLS**
- Thin walled pressure test vessel using low-melting alloy-filled joint to attach shell to heads  
[NASA-CASE-XLE-04677] c15 N71-10577
- THIN WALLS**
- Channel-type shell construction for rocket engines and related configurations  
[NASA-CASE-XLE-00144] c28 N70-34860
- Sealed separable connection for thin wall metal tube  
[NASA-CASE-NPO-10064] c15 N71-17693
- Low mass truss structure with elongated thin-walled tubular segments  
[NASA-CASE-LAR-10546-1] c11 N72-25287
- Development of differential pressure control system using motion of mechanical diaphragms to operate electric switch  
[NASA-CASE-MPS-14216] c14 N73-13418
- Method of fabricating an article with cavities --- with thin bottom walls  
[NASA-CASE-LAR-10318-1] c14 N74-18089
- Method of fabricating an object with a thin wall having a precisely shaped slit  
[NASA-CASE-LAR-10409-1] c15 N74-21059
- THORIUM FLUORIDES**
- Ultraviolet filter of thorium fluoride and cryolite on quartz base  
[NASA-CASE-XNP-02340] c23 N69-24332
- THREADS**
- Gage for quality control of sealing surfaces of threaded boss  
[NASA-CASE-XNP-04966] c14 N71-17658
- Threadless fastener apparatus comprising receiving apertures for plurality of articles, self-locked condition, and capable of using nonmalleable materials in both ends  
[NASA-CASE-IPR-05302] c15 N71-23254
- THREE DIMENSIONAL MOTION**
- Solid state controller three axes controller  
[NASA-CASE-MSC-12394-1] c03 N74-10942
- THRESHOLD GATES**
- Apparatus with summing network for compression of analog data by decreasing slope threshold sampling  
[NASA-CASE-NPO-10769] c08 N72-11171
- Radiation hardening of MOS devices by boron --- for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c76 N75-25730
- THRESHOLD LOGIC**
- Silicon controlled rectifier pulse gate amplifier for blocking false gating caused by negative transient voltages  
[NASA-CASE-XLA-07497] c09 N71-12514
- THRUST AUGMENTATION**
- Exhaust nozzle with afterburning for generating thrust  
[NASA-CASE-XLA-00154] c28 N70-33374
- Construction and method of arranging plurality of ion engines to form cluster thereby increasing efficiency and control by decreasing heat radiated to space  
[NASA-CASE-XNP-02923] c28 N71-23081
- Reversed cowl flap inlet thrust augmentor --- with adjustable airfoil  
[NASA-CASE-ARC-10754-1] c07 N75-24736
- THRUST BEARINGS**
- Thrust bearing  
[NASA-CASE-LEW-11949-1] c37 N75-26378
- THRUST CHAMBERS**
- Rocket chamber leak test fixture using tubular plug  
[NASA-CASE-XPR-09479] c14 N69-27503
- Supporting and protecting frame structure and plug for empty thrust chamber assembly, handling, and shipping  
[NASA-CASE-XNP-00580] c11 N70-35383
- Large area-ratio nozzles for rocket motor thrust chambers  
[NASA-CASE-XLE-00145] c28 N70-36806
- Method for shaping regeneratively cooled rocket motor casing having minimum thickness at each channel cross section  
[NASA-CASE-XLE-00409] c28 N71-15658
- Regeneratively cooled rocket motor casing with tapered channels to insure minimum thicknesses at each channel cross section for necessary strength requirements  
[NASA-CASE-XLE-05689] c28 N71-15659
- Rocket engine injector orifice to accommodate changes in density, velocity, and pressure, thereby maintaining constant mass flow rate of propellant into rocket combustion chamber  
[NASA-CASE-XLE-03157] c28 N71-24736
- Fuel and oxidizer injection head for thrust chamber of reaction engine  
[NASA-CASE-NPO-10046] c28 N72-17843
- Continuous gas flow control by fluidic proportional thruster system  
[NASA-CASE-ARC-10106-1] c28 N72-22769
- Radial magnetic field for ion thruster  
[NASA-CASE-LEW-10770-1] c28 N72-22770
- Thermal flux transfer system for maintaining thrust chamber of operative reaction motor at given temperatures  
[NASA-CASE-NPO-12070-1] c28 N73-32606
- THRUST CONTROL**
- Electromechanical actuator and its use in rocket thrust control valve  
[NASA-CASE-XNP-05975] c15 N69-23185
- Solid propellant rocket vehicle thrust control method and apparatus  
[NASA-CASE-XNP-00217] c28 N70-38181
- Thrust and attitude control apparatus using jet nozzle in movable canard surface or fin configuration  
[NASA-CASE-XLE-03583] c31 N71-17629
- Detonation reaction engine comprising outer housing enclosing pair of inner walls for continuous flow  
[NASA-CASE-XNP-06926] c28 N71-22983
- Low mass ionizing device for use in electric thrust spacecraft engines  
[NASA-CASE-XNP-01954] c28 N71-28850

## SUBJECT INDEX

TIRES

Heated porous plug microthruster for spacecraft reaction jet controlled systems such as fuel flow regulation, propellant disassociation, and heat transfer augmentation  
[NASA-CASE-GSC-10640-1] c28 N72-18766

**THRUST LOADS**  
Thrust measurement  
[NASA-CASE-XMS-05731] c35 N75-29382

**THRUST MEASUREMENT**  
Dynamometer measuring microforce thrust produced by ion engine  
[NASA-CASE-XLE-00702] c14 N70-40203  
Development of thrust dynamometer for measuring performance of jet and rocket engines  
[NASA-CASE-XLE-05260] c14 N71-20429  
Development of temperature compensated thrust measuring gage for measuring forces as function of time in environment with varying temperature  
[NASA-CASE-XGS-02319] c14 N71-22965  
Micro-pound extended range thrust stand for small rocket engines  
[NASA-CASE-GSC-10710-1] c28 N71-27094

**THRUST VECTOR CONTROL**  
Thrust vector control by secondary injection of fluid into rocket nozzle flow field to separate exhaust flow  
[NASA-CASE-XLE-00208] c28 N70-34294  
High velocity guidance and spin stabilization gyro controlled jet reaction system for launch vehicle payloads  
[NASA-CASE-XLA-01339] c31 N71-15692  
Ion beam deflector system for electronic thrust vector control for ion propulsion yaw, pitch, and roll forces  
[NASA-CASE-LEW-10689-1] c28 N71-26173  
Tertiary flow injection system for thrust vectoring of propulsive nozzle flow  
[NASA-CASE-MPS-20831] c28 N71-29153  
Development of thrust control system for application to control of aircraft and spacecraft  
[NASA-CASE-MSC-13397-1] c21 N72-25595  
Development of vortex fluid amplifier for throttling rocket exhaust  
[NASA-CASE-LEW-10374-1] c28 N73-13773  
System for imposing directional stability on a rocket-propelled vehicle  
[NASA-CASE-MPS-21311-1] c20 N76-21275

**THRUST-WEIGHT RATIO**  
Launch pad missile release system with bending moment change rate reduction in thrust distribution structure at liftoff  
[NASA-CASE-XMP-03198] c30 N70-40353

**THYROID GLAND**  
Apparatus for producing high purity I-123 --- for thyroid measurement  
[NASA-CASE-LEW-10518-3] c15 N74-10476

**TILES**  
Strain arrestor plate for fused silica tile --- bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c27 N76-14264

**TIME CONSTANT**  
Variable time constant, wide frequency range smoothing network for noise removal from pulse chains  
[NASA-CASE-XGS-01983] c10 N70-41964

**TIME DISCRIMINATION**  
Extra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit  
[NASA-CASE-XGS-00381] c09 N70-34819

**TIME DIVISION MULTIPLEXING**  
Synchronizing apparatus for multi-access satellite time division multiplex system  
[NASA-CASE-XGS-05918] c07 N69-39974  
Time division multiplexer with magnetic latching relays  
[NASA-CASE-XNP-00431] c09 N70-38998  
Data processor having multiple sections activated at different times by selective power coupling to sections  
[NASA-CASE-XGS-04767] c08 N71-12494  
Minimum time delay unit for conventional time multiplexed data compression channels  
[NASA-CASE-XNP-08832] c08 N71-12506  
Time division relay synchronizer with master sync pulse for activating binary counter to produce signal identifying time slot for station  
[NASA-CASE-GSC-10373-1] c07 N71-19773  
Sampling circuit for signal processing in multiplex transmission by Fourier analysis  
[NASA-CASE-NPO-10388] c07 N71-24622  
Time division multiplexed telemetry transmitting system controlled by programmed memory  
[NASA-CASE-GSC-10131-1] c07 N71-24624

**TIME FUNCTIONS**  
Cathode ray oscilloscope for analyzing electrical waveforms representing amplitude distribution of time function  
[NASA-CASE-XNP-01383] c09 N71-10659

**TIME LAG**  
Closed loop radio communication ranging system to determine distance between moving airborne vehicle and fixed ground station  
[NASA-CASE-XNP-01501] c21 N70-41930  
Minimum time delay unit for conventional time multiplexed data compression channels  
[NASA-CASE-XNP-08832] c08 N71-12506  
Apparatus for estimating amplitude and sign of phase difference or time lag between two signals  
[NASA-CASE-NPO-11203] c10 N72-20224  
Automatic transponder --- measurement of the internal delay time of a transponder  
[NASA-CASE-GSC-12075-1] c32 N76-19318

**TIME MEASURING INSTRUMENTS**  
Mechanism for measuring nanosecond time differences between luminous events using streak camera  
[NASA-CASE-XLA-01987] c23 N71-23976

**TIME OF FLIGHT SPECTROMETERS**  
Design and characteristics of time of flight mass spectrometer to measure or analyze gases at low pressures and time of flight of single gas molecule  
[NASA-CASE-XNP-01056] c14 N71-23041

**TIME SERIES ANALYSIS**  
Device for performing statistical time-series analysis of complex electrical signal waveforms  
[NASA-CASE-MSC-12428-1] c10 N73-25240

**TIME SHARING**  
Integrated time shared instrumentation display for aerospace vehicle simulators  
[NASA-CASE-XLA-01952] c08 N71-12507

**TIME SIGNALS**  
Monitoring system for signal amplitude ranges over predetermined time interval  
[NASA-CASE-XMS-04061-1] c09 N69-39885  
Development of method for synchronizing clocks at several ground stations based on signals received from spacecraft or satellites  
[NASA-CASE-XNP-08875] c10 N71-23099  
Time synchronization system for synchronizing clocks at remote locations with master clock using moon reflected coded signals  
[NASA-CASE-NPO-10143] c10 N71-26326  
Circuit for measuring wide range of pulse rates by utilizing high capacity counter  
[NASA-CASE-XNP-06234] c10 N71-27137  
System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c33 N75-19519

**TIMING DEVICES**  
Design and development of synchronous servo loop control system  
[NASA-CASE-XNP-03744] c10 N71-20448  
Development of method for synchronizing clocks at several ground stations based on signals received from spacecraft or satellites  
[NASA-CASE-XNP-08875] c10 N71-23099  
Development and characteristics of resettable monostable pulse generator with charge rundown-timing circuit  
[NASA-CASE-GSC-11139] c09 N71-27016  
Data acquisition and processing system with buffer storage and timing device for magnetic tape recording of PCM data and timing information  
[NASA-CASE-NPO-12107] c08 N71-27255  
High speed photo-optical time recorder for indicating time at exposure of each frame of high speed movie camera film  
[NASA-CASE-RSC-10294] c14 N72-18411

**TIRES**  
Temperature sensor warning system for pneumatic tires of aircraft and ground vehicles  
[NASA-CASE-XLA-01926] c14 N71-15620

## TISSUES (BIOLOGY)

Resilient wheel design with woven wire tire and abrasive treads for lunar surface vehicles  
[NASA-CASE-NFS-13929] c15 N71-27091

## TISSUES (BIOLOGY)

Method and system for in vivo measurement of bone tissue  
[NASA-CASE-MSC-14276-1] c54 N75-21948  
Servo-controlled intravital microscope system  
[NASA-CASE-NPO-13214-1] c35 N75-25123

## TITANATES

Vacuum preparation of zinc titanate pigment resistant to loss of reflective properties  
[NASA-CASE-MFS-13532] c18 N72-17532

## TITANIUM

Joining aluminum to stainless steel by bonding aluminum coatings onto titanium coated stainless steel and brazing aluminum to aluminum/titanium coated steel  
[NASA-CASE-MFS-07369] c15 N71-20443

## TITANIUM ALLOYS

Method to prevent stress corrosion cracking in titanium alloys  
[NASA-CASE-NPO-10271] c17 N71-16393  
Chemical spot tests for identification of titanium and titanium alloys used in aerospace vehicles  
[NASA-CASE-LAR-10539-1] c17 N73-12547

## TOLERANCES (MECHANICS)

Mechanism for restraining universal joints to prevent separation while allowing bending, angulation, and lateral offset in any position about axis  
[NASA-CASE-XNP-02278] c15 N71-28951

## TOOLS

Tool attachment for spreading or moving away loose elements from terminal posts during winding of filamentary elements  
[NASA-CASE-XNP-02107] c15 N71-10809  
Development of adjustable attitude guide block for setting pins perpendicular to irregular convex work surface  
[NASA-CASE-XLA-07911] c15 N71-15571  
Hand tool for forming dimples and nipples on end portion of tubes  
[NASA-CASE-XMS-06876] c15 N71-21536  
Tool for mounting and removing studs with adhesive coated head portion  
[NASA-CASE-NFS-20299] c15 N72-11392  
Insert facing tool --- manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-NFS-21485-1] c15 N74-25968

## TOOTH DISEASES

Process for preparing calcium phosphate salts for tooth repair  
[NASA-CASE-ERC-10338] c04 N72-33072

## TORCHES

Computer controlled apparatus for maintaining welding torch angle and velocity during seam tracking  
[NASA-CASE-XNP-03287] c15 N71-15607  
Development of electric weeding torch with casing on one end to form inert gas shield  
[NASA-CASE-XNP-02330] c15 N71-23798

## TOROIDS

Flux gate magnetometer with toroidal gating coil and solenoidal output coil for signal modulation or amplification  
[NASA-CASE-XGS-01881] c09 N70-40123

## TORQUE

Gearing system for eliminating backlash and filtering input torque fluctuations from high inertia load  
[NASA-CASE-XGS-04227] c15 N71-21744  
Coupling arrangement for isolating torque loads from axial, radial, and bending loads  
[NASA-CASE-XLA-04897] c15 N72-22482

## TORQUE MOTORS

Low speed phaselock speed control system --- for brushless dc motor  
[NASA-CASE-GSC-11127-1] c09 N75-24758

## TORQUEMETERS

Remote-reading torquemeter for use where high horsepowers are transmitted at high rotative speeds  
[NASA-CASE-XLE-00503] c14 N70-34818  
Torquemeter for determining magnitude of torque generated by interaction of magnetic dipole between test specimen and ambient magnetic field  
[NASA-CASE-XGS-01013] c14 N71-23725

## SUBJECT INDEX

## TORSO

Restraint torso for increased mobility and reduced physiological effects while wearing pressurized suits  
[NASA-CASE-MSC-12397-1] c05 N72-25119

## TOUCH

Mechanically operated hand which can depress trigger using touch control device  
[NASA-CASE-MFS-20413] c15 N72-21463  
Measuring method for cutaneous perception using instrument with elongated tubular housing  
[NASA-CASE-MSC-13609-1] c05 N72-25122  
Prosthetic limb with tactile sensing device  
[NASA-CASE-MFS-16570-1] c05 N73-32013

## TOWERS

Aerial capsule emergency separation device using jettisonable towers  
[NASA-CASE-XLA-00115] c03 N70-33343

## TOXICITY AND SAFETY HAZARD

Apparatus for remote handling of materials --- mixing or analyzing dangerous chemicals  
[NASA-CASE-LAR-10634-1] c15 N74-18123

## TOXICOLOGY

System for continuous monitoring of exhalations, weighing, and cage cleaning for animal exposed to controlled atmosphere for toxic study  
[NASA-CASE-XAC-05333] c11 N71-22875

## TRACE CONTAMINANTS

Describing crystal oscillator instrument for detecting condensable gas contaminants in vacuum apparatus  
[NASA-CASE-NPO-10144] c14 N71-17701  
Heated tungsten filter for removing oxygen impurities from cesium  
[NASA-CASE-XNP-04262-2] c17 N71-26773

## TRACE ELEMENTS

Ion microprobe mass spectrometer with cooled electrode target for analyzing traces of fluids  
[NASA-CASE-ERC-10014] c14 N71-28863  
Method and apparatus for background signal reduction in opto-acoustic absorption measurement  
[NASA-CASE-NPO-13683-1] c35 N75-29383  
Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c25 N76-18245

## TRACKING (POSITION)

Sensor consisting of photocells mounted on pyramidal base for improved pointing accuracy of planetary trackers  
[NASA-CASE-XNP-04180] c07 N69-39736  
Telespectrograph for analyzing upper atmosphere by tracking bodies reentering atmosphere at high velocities  
[NASA-CASE-XLA-03273] c14 N71-18699  
Laser beam projector for continuous, precise alignment between target, laser generator, and astronomical telescope during tracking  
[NASA-CASE-NPO-11087] c23 N71-29125  
System and method for tracking a signal source --- employing feedback control  
[NASA-CASE-HQN-10880-1] c32 N75-30385

## TRACKING FILTERS

System for phase locking onto carrier frequency signal located within receiver bandpass  
[NASA-CASE-XGS-04994] c09 N69-21543

## TRACKING RADAR

Electronic and mechanical scanning control system for monopulse tracking antenna  
[NASA-CASE-XGS-05582] c07 N69-27460  
Phase locked loop with sideband rejecting properties in continuous wave tracking radar  
[NASA-CASE-XNP-02723] c07 N70-41680  
Interferometric tuning acquisition and tracking radar antenna system  
[NASA-CASE-XMS-09610] c07 N71-24625  
Acquisition and tracking system for optical radar  
[NASA-CASE-NFS-20125] c16 N72-13437

## TRACKING STATIONS

Optical monitor panel consisting of translucent screen with test or meter information projected onto it from rear for application in control rooms of missile launching and tracking stations  
[NASA-CASE-XKS-03509] c14 N71-23175  
Simultaneous acquisition of tracking data from two stations  
[NASA-CASE-NPO-13292-1] c32 N75-15854

## TRACTORS

An improved fifth wheel  
[NASA-CASE-PRC-10081-1] c37 N75-29432

## TRAFFIC CONTROL

Traffic survey system --- using optical scanners  
[NASA-CASE-MPS-22631-1] c66 N76-19888

## TRAILERS

An improved fifth wheel  
[NASA-CASE-PRC-10081-1] c37 N75-29432

## TRAILING-EDGE FLAPS

Double hinged flap for boundary layer control  
over trailing edges of wings  
[NASA-CASE-XLA-01290] c02 N70-42016

## TRAINING SIMULATORS

Low and zero gravity simulator for astronaut  
training  
[NASA-CASE-MPS-10555] c11 N71-19494  
Apparatus for training astronaut crews to  
perform on simulated lunar surface under  
conditions of lunar gravity  
[NASA-CASE-XMS-04798] c11 N71-21474  
Kinesthetic control simulator --- for pilot  
training  
[NASA-CASE-LAR-10276-1] c09 N75-15662

## TRAJECTORY ANALYSIS

Table structure and rotating magnet system  
simulating gravitational forces on spacecraft  
and displaying trajectories between Earth,  
Venus, and Mercury  
[NASA-CASE-XNP-00708] c14 N70-35394  
Planetary atmospheric investigation using split  
trajectory dual flyby mode  
[NASA-CASE-YAC-08494] c30 N71-15990

## TRAJECTORY CONTROL

Spacecraft trajectory correction propulsion system  
[NASA-CASE-XNP-01104] c28 N70-39931  
Development of technique for control of free  
flight rocket vehicles  
[NASA-CASE-XLA-00937] c31 N71-17691  
Attitude stabilizer for nonguided missile or  
vehicle with respect to trajectory  
[NASA-CASE-ARC-10134] c30 N72-17873

## TRANSDUCERS

Fabrication of pressure-telemetry transducers  
[NASA-CASE-XNP-09752] c14 N69-21541  
Bootstrap unloading circuits for sampling  
transducer voltage sources without drawing  
current  
[NASA-CASE-XNP-09768] c09 N71-12516  
Transducer for measuring deflections from  
vibrating structures  
[NASA-CASE-XLA-03135] c32 N71-16428  
Describing device for surveying contour of  
surface using X-Y plotter and traveling  
transducer  
[NASA-CASE-XLA-08646] c14 N71-17586  
Rotary bead dropper and selector for testing  
micrometeorite transducers  
[NASA-CASE-XGS-03304] c09 N71-22988  
Development and characteristics of self-  
calibrating displacement transducer for  
measuring magnitude and frequency of  
displacement of bodies  
[NASA-CASE-XLA-00781] c09 N71-22999  
Transducer frame for use with extensometer to  
continuously monitor specimen sample  
[NASA-CASE-XLA-10322] c15 N72-17452  
Split range transducer  
[NASA-CASE-XLA-11189] c10 N72-20222  
Pulsed excitation voltage circuit for strain  
gage bridge transducers  
[NASA-CASE-PRC-10036] c09 N72-22200  
Passive type, magnifying scratch gage, force  
transducer  
[NASA-CASE-LAR-10496-1] c14 N72-22437  
Development of electronic detection system for  
remotely determining number and movement of  
enemy personnel  
[NASA-CASE-ARC-10097-2] c07 N73-25160  
Acoustical transducer calibrating system  
including differential pressure activating  
device  
[NASA-CASE-PRC-10060-1] c14 N73-27379  
Demodulator for carrier transducers  
[NASA-CASE-NUC-10107-1] c09 N74-17930  
LC-oscillator with automatic stabilized  
amplitude via bias current control --- power  
supply circuit for transducers  
[NASA-CASE-MPS-21698-1] c09 N74-26732

## Arterial pulse wave pressure transducer

[NASA-CASE-GSC-11531-1] c05 N74-27566

Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-3] c33 N75-19520

Myocardium wall thickness transducer  
[NASA-CASE-NPO-13644-1] c35 N75-22689

Subminiature insertable force transducer ---  
including a strain gage to measure forces in  
muscles  
[NASA-CASE-NPO-13423-1] c33 N75-31329

Self-supporting strain transducer  
[NASA-CASE-LAR-11263-1] c35 N75-33369

Miniature muscle displacement transducer  
[NASA-CASE-NPO-13519-1] c33 N76-19338

## TRANSFORMERS

Impedance transformation device for signal mixing  
[NASA-CASE-XGS-01110] c07 N69-24334

High impedance alternating current sensing  
transformer device between two bolometers for  
measuring insertion loss of test component  
[NASA-CASE-XNP-01193] c10 N71-16057

Magnetic current regulator for saturable core  
transformer  
[NASA-CASE-ERC-10075] c09 N71-24800

Unsaturating magnetic core transformer design  
with warning signal for electrical power  
processing equipment  
[NASA-CASE-ERC-10125] c09 N71-24893

Development and characteristics of  
electronically resettable fuse with saturable  
core current sensing transformer having two  
outside legs and center leg  
[NASA-CASE-XGS-11177] c09 N71-27001

Development and characteristics of voltage  
regulator for connection in series with  
alternating current source and load using  
three leg, two-window transformer  
[NASA-CASE-ERC-10113] c09 N71-27053

Radial heat flux transformer for use in heating  
and cooling processes  
[NASA-CASE-NPO-10828] c33 N72-17948

Current protection equipment for saturable core  
transformers  
[NASA-CASE-ERC-10075-2] c09 N72-22196

Fail-safe multiple transformer circuit  
configuration  
[NASA-CASE-NPO-11078] c09 N72-25262

Banded transformer cores  
[NASA-CASE-NPO-11966-1] c09 N74-17928

Solid state current transformer  
[NASA-CASE-MPS-22560-1] c33 N75-26251

## TRANSIENT LOADS

Deployable cantilever support for deploying  
solar cell arrays aboard spacecraft and  
reducing transient loading  
[NASA-CASE-NPO-10883] c31 N72-22874

## TRANSISTOR AMPLIFIERS

Overcurrent protecting circuit for push-pull  
transistor amplifiers  
[NASA-CASE-MSC-12033-1] c09 N71-13531

## TRANSISTOR CIRCUITS

Low power drain transistor feedback circuit  
[NASA-CASE-XGS-04999] c09 N69-24317

Design of transistorized ring counter circuit  
with special steering and triggering circuits  
[NASA-CASE-XGS-03095] c09 N69-27463

RC transistor circuit to indicate each pulse of  
pulse train and occurrence of nth pulse  
[NASA-CASE-XMP-00906] c09 N70-41655

Linear sawtooth voltage wave generator with  
transistor timing circuit having capacitor and  
zener diode feedback loops  
[NASA-CASE-XMS-01315] c09 N70-41675

Switching circuit with regeneratively connected  
transistors eliminating power consumption when  
not in use  
[NASA-CASE-XNP-02654] c10 N70-42032

High voltage transistor circuit  
[NASA-CASE-XNP-06937] c09 N71-19516

Complementary regenerative transistorized switch  
circuit employing positive and negative feedback  
[NASA-CASE-XGS-02751] c09 N71-23015

Inverter drive circuit for semiconductor switch  
[NASA-CASE-LEW-10233] c10 N71-27126

Transistorized circuit for producing multiple  
slope voltage sweep  
[NASA-CASE-XMS-03542] c09 N71-28926

Circuitry for high input impedance video  
processor with high noise immunity

## TRANSISTORS

[NASA-CASE-NPO-10199] c09 N72-17156  
Ultra-stable oscillator with complementary transistors  
[NASA-CASE-GSC-11513-1] c09 N74-20862

**TRANSISTORS**  
Power supply with overload protection for series stage transistor  
[NASA-CASE-XMS-00913] c10 N71-23543  
Solid state circuit for switching alternating current input signal as function of direct current gating transistor  
[NASA-CASE-XNP-06505] c10 N71-24799  
Broadband distribution amplifier with complementary pair transistor output stages  
[NASA-CASE-NPO-10003] c10 N71-26415  
Transistorized switching logic circuits with tunnel diodes  
[NASA-CASE-GSC-10878-1] c10 N72-22236  
Inverted geometry transistor for use with monolithic integrated circuit  
[NASA-CASE-ARC-10330-1] c09 N73-32112  
Four phase logic systems --- including integrated microcircuits  
[NASA-CASE-MSC-14240-1] c33 N75-14957

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[NASA-CASE-LAR-11828-1] c23 N75-29181

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[NASA-CASE-NPO-10679] c15 N72-21462

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Portable equipment for validating C band launch pad antennas and transmission lines used for spacecraft checkout  
[NASA-CASE-XKS-10543] c07 N71-26292  
Collapsible antenna boom and coaxial transmission line having inflatable inner tube  
[NASA-CASE-MPS-20068] c07 N71-27191  
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[NASA-CASE-MSC-13201-1] c07 N71-28429  
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[NASA-CASE-XGS-04554] c15 N69-39786  
Method for producing porous tungsten plates for ionizing cesium compounds for propulsion of ion engines  
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[NASA-CASE-LEW-10533-2] c15 N74-11300

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[NASA-CASE-XNP-08124-2] c06 N73-13129

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[NASA-CASE-MPS-20335-1] c14 N74-10415  
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[NASA-CASE-MPS-20767-1] c15 N74-15130  
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[NASA-CASE-ARC-10030] c09 N71-12521  
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Concave grating spectrometer for use in near and vacuum ultraviolet regions  
[NASA-CASE-XGS-01036] c14 N70-40003  
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[NASA-CASE-XLA-03273] c14 N71-18699

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Umbilical separator for rockets  
[NASA-CASE-XNP-00425] c11 N70-38202  
Remotely actuated quick disconnect mechanism for umbilical cables  
[NASA-CASE-XLA-00711] c03 N71-12258  
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[NASA-CASE-XLA-01396] c03 N71-12259  
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[NASA-CASE-XMP-05344] c31 N71-16345  
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[NASA-CASE-NPO-11140] c15 N72-17455  
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[NASA-CASE-NPO-11202] c15 N72-25450

## UMBILICAL TOWERS

Emergency escape cabin system for launch towers  
[NASA-CASE-XKS-02342] c05 N71-11199

## UNDERWATER ENGINEERING

Ejectable underwater sound source recovery assembly  
[NASA-CASE-LAR-10595-1] c15 N74-16135

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[NASA-CASE-MPS-20332] c05 N72-20097  
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[NASA-CASE-MPS-20332-2] c05 N73-25125

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Wind tunnel flow generation section  
[NASA-CASE-ARC-10710-1] c09 N75-12969

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Bootstrap unloading circuits for sampling transducer voltage sources without drawing current  
[NASA-CASE-XNP-09768] c09 N71-12516

## UNMANNED SPACECRAFT

Device which separates and screens particles of soil samples for vidicon viewing in vacuum and reduced gravity environments  
[NASA-CASE-XNP-09770-3] c11 N71-27036

## UPPER ATMOSPHERE

Telespectrograph for analyzing upper atmosphere by tracking bodies reentering atmosphere at high velocities  
[NASA-CASE-XLA-03273] c14 N71-18699  
Development and operation of apparatus for sampling particulates in gases in upper atmosphere  
[NASA-CASE-HQN-10037-1] c14 N73-27376  
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[NASA-CASE-LAR-10670-2] c31 N74-27360

## URINALYSIS

Automated fluid chemical analyzer for microchemical analysis of small quantities of liquids by use of selected reagents and analyzer units  
[NASA-CASE-XNP-09451] c06 N71-26754  
Enzymatic luminescent bioassay method for determining bacterial levels in urine  
[NASA-CASE-GSC-11092-2] c04 N73-27052  
Automatic device for assaying urine on bacterial adenosine triphosphate content  
[NASA-CASE-GSC-11169-2] c05 N73-32011

## URINATION

Open type urine receptacle with tubular housing  
[NASA-CASE-HSC-12324-1] c05 N72-22093

## V

## V GROOVES

Vee-notching device --- with adjustable carriage  
[NASA-CASE-MFS-20730-1] c14 N74-13131

## VACUUM

Hole mobility of deposited semiconductor films in vacuum utilizing thermal gradient  
[NASA-CASE-XKS-04614] c15 N69-21460  
Operating properties of superconducting magnet in vacuum environment  
[NASA-CASE-XNP-06503] c23 N71-29049

## VACUUM APPARATUS

Null-type vacuum microbalance for measuring minute mechanical displacements  
[NASA-CASE-XAC-00472] c15 N70-40180  
Sealing evacuation port and evacuating vacuum container such as space jackets  
[NASA-CASE-XMP-03290] c15 N71-23256  
Apparatus for determining volatile condensable material present in polymeric products  
[NASA-CASE-XNP-09699] c06 N71-24607  
Oil trap for preventing diffusion pump backstreaming into evacuated system  
[NASA-CASE-GSC-10518-1] c15 N72-22489  
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[NASA-CASE-LW-10330-1] c09 N72-27226  
Development of apparatus for producing metal powder particles of controlled size  
[NASA-CASE-XLE-06461-2] c17 N72-28535  
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[NASA-CASE-LAR-10623-1] c14 N73-30395  
Servo valve  
[NASA-CASE-LAR-11643-1] c37 N75-13268  
Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c35 N75-19612  
Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c37 N76-21554

## VACUUM CHAMBERS

High-vacuum condenser tank for testing ion rocket engines  
[NASA-CASE-XLE-00168] c11 N70-33278  
Portable electron beam welding chamber  
[NASA-CASE-LW-11531] c15 N71-14932  
Space environmental work simulator with portions of space suit mounted to vacuum chamber wall  
[NASA-CASE-XMP-07488] c11 N71-18773  
Ionization control system design for monitoring separately located ion gage pressures on vacuum chambers  
[NASA-CASE-XLE-00787] c14 N71-21090  
Coherent light beam device and method for measuring gas density in vacuum chambers  
[NASA-CASE-XER-11203] c14 N71-28994  
Transferring liquid nitrogen through vacuum chamber to cryopanel  
[NASA-CASE-LAR-10031] c15 N72-22484  
Vacuum chamber with scale model of rocket engine base area of space vehicle  
[NASA-CASE-MPS-20620] c11 N72-27262  
Packless valve for use with evacuation chamber with adapter for attachment to vacuum line and vacuum pump  
[NASA-CASE-LAR-10061-1] c15 N72-31483  
Apparatus for analyzing gas samples in containers including vacuum chamber, mass spectrometer, and gas chromatography  
[NASA-CASE-GSC-10903-1] c14 N73-12444  
Design and development of test stand system for supporting test items in vacuum chamber  
[NASA-CASE-MPS-21362] c11 N73-20267

## VACUUM DEPOSITION

Deposition method for epitaxial beta SiC films having high degree of crystallographic perfection  
[NASA-CASE-ERC-10120] c26 N69-33482  
Describing apparatus used in vacuum deposition of thin film inductive windings for spacecraft microcircuitry  
[NASA-CASE-XMP-01667] c15 N71-17647  
Spatter proof evaporant source design for use in vacuum deposition of solid thin films on substrates  
[NASA-CASE-XMP-06065] c15 N71-20395

# VACUUM FURNACES

# SUBJECT INDEX

Device for high vacuum film deposition with electromagnetic ion steering  
[NASA-CASE-NPO-10331] c09 N71-26701

## VACUUM FURNACES

Apparatus for inserting and removing specimens from high temperature vacuum furnaces  
[NASA-CASE-LAR-10841-1] c15 N74-27900

## VACUUM GAGES

Simulating operation of thermopile vacuum gage tube at high and low pressures  
[NASA-CASE-XLA-02758] c14 N71-18481  
Calibration of vacuum gauges for measuring total and partial pressures in ultrahigh vacuum region  
[NASA-CASE-XGS-07752] c14 N73-30390  
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[NASA-CASE-XLA-05087] c14 N73-30391  
In situ transfer standard for ultrahigh vacuum gage calibration  
[NASA-CASE-LAR-10862-1] c14 N74-15092

## VACUUM MELTING

Electric furnace for vacuum and zero gravity melting of high melting point materials during earth orbit  
[NASA-CASE-MPS-20710] c11 N72-23215  
A process for forming a crystalline film --- in weightless environment  
[NASA-CASE-MPS-23226-1] c76 N75-33861

## VACUUM SYSTEMS

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[NASA-CASE-XGS-00587] c15 N70-35087  
Leakproof soft metal seal for use in very high vacuum systems operating at cryogenic temperatures  
[NASA-CASE-XGS-02441] c15 N70-41629  
Describing hot filament type Bayard-Alpert ionization gage with ion collector buried or removed from grid structure  
[NASA-CASE-XLA-07424] c14 N71-18482  
Describing sorption vacuum trap having housing with group of reentrant wall portions projecting into internal gas-pervious container filled with gas and vapor sorbent material  
[NASA-CASE-XER-09519] c14 N71-18483  
Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c35 N75-19612

## VACUUM TUBES

Integrated structure vacuum tube  
[NASA-CASE-ARC-10445-1] c09 N74-29577

## VALUE

High impact pressure regulator having minimum number of lightweight movable elements  
[NASA-CASE-NPO-10175] c14 N71-18625

## VALVES

Actuator using compressed gas as driving force to control valve handling large liquid flows  
[NASA-CASE-XHQ-01208] c15 N70-35409  
Two component valve assembly for cryogenic liquid transfer regulation  
[NASA-CASE-XLE-00397] c15 N70-36492  
High pressure four-way valve with O ring adapted to pass across inlet port  
[NASA-CASE-XNP-00214] c15 N70-36908  
Reinforcing beam system for highly flexible diaphragms in valves or pressure switches  
[NASA-CASE-XNP-01962] c32 N70-41370  
Multiple vortex amplifier system as fluid valve  
[NASA-CASE-XMP-04709] c15 N71-15609  
Throttle valve for regulating fluid flow volume  
[NASA-CASE-XNP-09698] c15 N71-18580  
Development and characteristics of high pressure control valve  
[NASA-CASE-MSC-11010] c15 N71-19485  
Valve seat with resilient support ring for venting valves subjected to high pressure sealing loads  
[NASA-CASE-XKS-02582] c15 N71-21234  
Positive locking check valve for stopping reversed flow  
[NASA-CASE-XMS-09310] c15 N71-22706  
Valve assembly for controlling simultaneously more than one fluid flow, and having stable qualities under loads  
[NASA-CASE-XMS-05890] c09 N71-23191  
Segmented sealing surface in valve seat  
[NASA-CASE-NPO-10606] c15 N72-25451  
Packless valve for use with evacuation chamber with adapter for attachment to vacuum line and

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[NASA-CASE-LAR-10061-1] c15 N72-31483  
Flow control valve --- for high temperature fluids  
[NASA-CASE-NPO-11951-1] c15 N74-21065  
Airlock  
[NASA-CASE-MPS-20922-1] c15 N74-22136

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[NASA-CASE-XNP-05535] c14 N71-23040  
Rotary vane attenuator with two stators and intermediary rotor, using resistive and orthogonally disposed cards  
[NASA-CASE-NPO-11418-1] c14 N73-13420

## VAPOR DEPOSITION

Deposition method for epitaxial beta SiC films having high degree of crystallographic perfection  
[NASA-CASE-ERC-10120] c26 N69-33482  
Device for producing high purity silicon carbide on carbon base by hydrogen reduction of silicon tetrachloride  
[NASA-CASE-XLA-02057] c26 N70-40015  
Water content in vapor deposition atmosphere for forming n-type and p-type junctions of zinc doped gallium arsenide  
[NASA-CASE-XNP-01961] c26 N71-29156  
Vapor deposition method for forming metallized tungsten contacts on silicon substrates  
[NASA-CASE-GSC-10695-1] c09 N72-25259  
Means of vapor deposition using electric current and evaporator filament  
[NASA-CASE-LAR-10541-1] c15 N72-32487  
Deposition of alloy films --- on irregularly shaped metal object  
[NASA-CASE-LEW-11262-1] c18 N74-13270  
System for depositing thin films  
[NASA-CASE-MPS-20775-1] c31 N75-12161  
Vapor deposition apparatus --- semiconductors and gallium arsenides  
[NASA-CASE-HQN-10462] c25 N75-29192

## VAPOR PHASES

Method and feed system for separating and orienting liquid and vapor phases of liquid propellants in zero gravity environment  
[NASA-CASE-XLE-01182] c27 N71-15635  
Gallium arsenide solar cell preparation by surface deposition of cuprous iodide on thin n-type polycrystalline layers and heating in iodine vapor  
[NASA-CASE-XNP-01960] c09 N71-23027  
Mixed liquid and vapor phase analyzer design with thermocouples for relative heat transfer measurement  
[NASA-CASE-NPO-10691] c14 N71-26199  
Electronic recording system for spatial mass distribution of liquid rocket propellant droplets or vapors ejected from high velocity nozzles  
[NASA-CASE-NPO-10185] c10 N71-26339  
Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c31 N75-32262  
Photon excited catalysis  
[NASA-CASE-NPO-13566-1] c25 N76-17216

## VAPOR PRESSURE

Fuel tank pressure-relief device for venting cryogenic liquid vapors through tubes with porous plug  
[NASA-CASE-XLE-00288] c15 N70-34247  
Vapor-liquid separator design with vapor driven pump for separated liquid pumping for application in propellant transfer  
[NASA-CASE-XMP-04042] c15 N71-23023

## VAPOR TRAPS

Describing sorption vacuum trap having housing with group of reentrant wall portions projecting into internal gas-pervious container filled with gas and vapor sorbent material  
[NASA-CASE-XER-09519] c14 N71-18483

## VAPORIZERS

Vapor generating boiler system for turbine motor  
[NASA-CASE-XLE-00785] c33 N71-16104

## VAPORIZING

Apparatus and process for volumetrically dispensing reagent quantities of volatile chemicals for small batch reactions

- [NASA-CASE-NPO-10070] c15 N71-27372  
Development of method for controlling vapor  
content of gas  
[NASA-CASE-NPO-10633] c03 N72-28025
- VARACTOR DIODE CIRCUITS**  
Phase modulator with tuned variable length  
electrical lines including coupling and  
varactor diode circuits  
[NASA-CASE-MSC-13201-1] c07 N71-28429
- VARACTOR DIODES**  
Varactor microwave frequency mixing circuit  
[NASA-CASE-XGS-02171] c09 N69-24324  
Multiple varactor for generating high  
frequencies with high power and high  
conversion efficiency  
[NASA-CASE-XMF-04958-1] c10 N71-26414  
Millimeter wave pumped parametric amplifier  
[NASA-CASE-GSC-11617-1] c09 N74-32660
- VARIABLE GEOMETRY STRUCTURES**  
Aerospace configuration with low and high aspect  
ratio variability for high and low speed flight  
[NASA-CASE-XLA-00142] c02 N70-33286  
Variable geometry wind tunnel for testing  
aircraft models at subsonic speeds  
[NASA-CASE-XLA-07430] c11 N72-22246
- VARIABLE SWEEP WINGS**  
Variable sweep wing configuration for supersonic  
aircraft  
[NASA-CASE-XLA-00230] c02 N70-33255  
Variable aspect ratio and variable sweep delta  
wing planforms for supersonic aircraft  
[NASA-CASE-XLA-00221] c02 N70-33266  
Supersonic aircraft configuration providing for  
variable aspect ratio and variable sweep wings  
[NASA-CASE-XLA-00166] c02 N70-34178  
Supersonic aircraft variable sweep wing planform  
for varying aspect ratio  
[NASA-CASE-XLA-00350] c02 N70-38011  
Development and characteristics of variable  
sweep wing control system for supersonic  
aircraft  
[NASA-CASE-XLA-03659] c02 N71-11041  
Design of dual fuselage aircraft with pivoting  
wing and horizontal stabilizer to permit  
yawing of wing in flight for high speed  
operation  
[NASA-CASE-ARC-10470-1] c02 N73-26005
- VARIABLE THRUST**  
Variable thrust ion engine using thermal  
decomposition of solid cesium compound to  
produce propulsive vapor  
[NASA-CASE-XMF-00923] c28 N70-36802  
Continuous variation of propellant flow and  
thrust by application of liquid foam flow  
theory to injection orifice  
[NASA-CASE-XLE-00177] c28 N70-40367
- VARIATIONS**  
Gearing system for eliminating backlash and  
filtering input torque fluctuations from high  
inertia load  
[NASA-CASE-XGS-04227] c15 N71-21744
- VECTOR ANALYSIS**  
Development of two force component measuring  
device  
[NASA-CASE-XAC-04886-1] c14 N71-20439
- VECTOCARDIOGRAPHY**  
Electromedical garment, applying  
vectocardiologic type electrodes to human  
torsos for data recording during physical  
activity  
[NASA-CASE-XPR-10856] c05 N71-11189
- VEGETATION GROWTH**  
Rotary plant growth accelerating apparatus ---  
weightlessness  
[NASA-CASE-ARC-10722-1] c51 N75-25503
- VEHICLE WHEELS**  
Resilient vehicle wheel for lunar surface travel  
[NASA-CASE-MFS-20400] c31 N71-18611  
Resilient wheel design with woven wire tire and  
abrasive treads for lunar surface vehicles  
[NASA-CASE-MFS-13929] c15 N71-27091  
Omnidirectional wheel  
[NASA-CASE-MFS-21309-1] c15 N74-18125  
Two speed drive system --- mechanical device for  
changing speed on rotating vehicle wheel  
[NASA-CASE-MFS-20645-1] c15 N74-23070  
An improved fifth wheel  
[NASA-CASE-PRC-10081-1] c37 N75-29432
- VELOCITY**  
Velocity limiting safety system for motor driven  
research vehicle  
[NASA-CASE-XLA-07473] c15 N71-24895
- VELOCITY MEASUREMENT**  
-Particle detector for measuring micrometeoroid  
velocity in space  
[NASA-CASE-XLA-00495] c14 N70-41332  
Superconductive accelerometer employing variable  
force principle to determine acceleration of  
bodies  
[NASA-CASE-XMF-01099] c14 N71-15969  
Device for determining acceleration of gravity  
by interferometric measurement of travel of  
falling body  
[NASA-CASE-XMF-05844] c14 N71-17587  
Describing laser Doppler velocimeter for  
measuring mean velocity and turbulence of  
fluid flow  
[NASA-CASE-MFS-20386] c21 N71-19212  
Momentum-velocity analyzer for measuring minute  
space particles  
[NASA-CASE-XMS-04201] c14 N71-22990  
Development of combined velocimeter and  
accelerometer based on color changes in liquid  
crystalline material subjected to shear stresses  
[NASA-CASE-ERC-10292] c14 N72-25410  
Instrument for measuring magnitude and direction  
of flow velocity in flow field  
[NASA-CASE-LAR-10855-1] c14 N73-13415  
Doppler shift system --- system for measuring  
velocities of radiating particles  
[NASA-CASE-HQN-10740-1] c24 N74-19310  
Tachometer  
[NASA-CASE-MFS-23175-1] c35 N76-19409
- VELOCITY MODULATION**  
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discrimination of high velocity molecular  
particles  
[NASA-CASE-XLE-01533] c11 N71-10777  
Describing device for velocity control of  
electromechanical drive mechanism of scanning  
mirror of interferometer  
[NASA-CASE-XGS-03532] c14 N71-17627
- VENTILATORS**  
Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c54 N75-27761
- VENTING**  
Fuel tank pressure-relief device for venting  
cryogenic liquid vapors through tubes with  
porous plug  
[NASA-CASE-XLE-00288] c15 N70-34247  
Venting device for liquid propellant storage  
tank using magnetic field to separate liquid  
and gaseous phases  
[NASA-CASE-XLE-01449] c15 N70-41646  
Valve seat with resilient support ring for  
venting valves subjected to high pressure  
sealing loads  
[NASA-CASE-XKS-02582] c15 N71-21234  
Venting device for pressurized space suit helmet  
to eliminate vomit expelled by crewmen  
[NASA-CASE-XMS-09652-1] c05 N71-26333  
Solid propellant rocket engine with venting  
system to control effective nozzle throat area  
[NASA-CASE-XNP-03282] c28 N72-20758
- VENUS (PLANET)**  
Space simulator with uniform test region  
radiation distribution, adapted to simulate  
Venus solar radiations  
[NASA-CASE-XNP-00459] c11 N70-38675
- VERTICAL FLIGHT**  
Aircraft indicator for pilot control of takeoff  
roll, climbout path and verticle flight path  
in poor visibility conditions  
[NASA-CASE-XLA-00487] c14 N70-40157
- VERTICAL LANDING**  
Vertically descending flight vehicle landing  
gear for rough terrain  
[NASA-CASE-XMF-01174] c02 N70-41589
- VERTICAL TAKEOFF AIRCRAFT**  
Mechanical stabilization system for VTOL aircraft  
[NASA-CASE-XLA-06339] c02 N71-13422  
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vertical takeoff aircraft using reaction  
nozzles displaced from various axes of aircraft  
[NASA-CASE-XAC-08972] c02 N71-20570
- VERY HIGH FREQUENCIES**  
VHF/UHF parasitic probe antenna for spacecraft

# VESTS

# SUBJECT INDEX

communication  
[NASA-CASE-XKS-09340] c07 N71-24614

**VESTS**  
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[NASA-CASE-XMS-00864] c05 N70-36493

**VIBRATION**  
Three stage motion restraining mechanism for restraining and damping three dimensional vibrational movement of gimballed package during launch of spacecraft  
[NASA-CASE-GSC-10306-1] c15 N71-24694  
Vibration control of flexible bodies in steady accelerating environment  
[NASA-CASE-LAR-10106-1] c15 N71-27169

**VIBRATION DAMPING**  
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[NASA-CASE-LAR-10274-1] c14 N71-17626  
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[NASA-CASE-NPO-11088] c08 N71-29034  
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[NASA-CASE-XLE-00155] c28 N71-29154

**VIBRATION EFFECTS**  
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[NASA-CASE-XAC-10768] c09 N71-18830  
Development of ultrasonic radiation equipment for removing material from host surface and vacuum apparatus for recovery of material  
[NASA-CASE-NPO-11213] c15 N73-20514  
Development of optical system for detecting defective components in rotating machinery with emphasis on bearing assemblies  
[NASA-CASE-KSC-10752-1] c15 N73-27407

**VIBRATION ISOLATORS**  
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[NASA-CASE-XAC-11225] c14 N69-27486  
Miniature vibration isolator utilizing elastic tubing material  
[NASA-CASE-XLA-01019] c15 N70-40156  
Vibration damping system operating in low vacuum environment for spacecraft mechanisms  
[NASA-CASE-XMS-01620] c23 N71-15673  
Hermetically sealed vibration damper design for use in gimbal assembly of spacecraft inertial guidance system  
[NASA-CASE-MSC-10959] c15 N71-26243  
Tuned damped vibration absorber for mass vibrating in more than one degree of freedom for use with wind tunnel models  
[NASA-CASE-LAR-10083-1] c15 N71-27006  
Vibration isolation system, using coaxial helical compression springs  
[NASA-CASE-NPO-11012] c15 N72-11391  
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[NASA-CASE-MPS-21680-1] c32 N74-27397  
Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c37 N75-18573

**VIBRATION MEASUREMENT**  
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[NASA-CASE-ARC-10154-1] c14 N72-22440  
Recording apparatus  
[NASA-CASE-LAR-11353-1] c14 N74-20020  
Method and apparatus for vibration analysis utilizing the Mossbauer effect  
[NASA-CASE-XNP-05882] c35 N75-27329

**VIBRATION METERS**  
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[NASA-CASE-XNP-02433] c14 N71-10616

**VIBRATION MODE**  
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[NASA-CASE-LAR-10310-1] c10 N73-20253

**VIBRATION SIMULATORS**  
Equipment for vibration testing of assemblies, components, and other articles  
[NASA-CASE-GSC-11302-1] c14 N73-13416

**VIBRATION TESTS**  
Electronic detection system for peak acceleration limits in vibrational testing of

spacecraft components  
[NASA-CASE-NPO-10556] c14 N71-27185  
Fixture for supporting articles during vibration tests comprising integral annular unit  
[NASA-CASE-MPS-20523] c14 N72-27412  
Equipment for vibration testing of assemblies, components, and other articles  
[NASA-CASE-GSC-11302-1] c14 N73-13416  
Multi-axes vibration device for making vibration tests along orthogonal axes of test specimen  
[NASA-CASE-MPS-20242] c14 N73-19421

**VIBRATIONAL SPECTRA**  
Tuned damped vibration absorber for mass vibrating in more than one degree of freedom for use with wind tunnel models  
[NASA-CASE-LAR-10083-1] c15 N71-27006

**VIDEO COMMUNICATION**  
Circuitry for generating sync signals in FM communication systems including video information  
[NASA-CASE-XNP-10830] c07 N71-11281  
Monitoring circuit design for sampling circuit control and reduction of time-bandwidth in video communication systems  
[NASA-CASE-XNP-02791] c07 N71-23026  
Teletypewriter video communication system and apparatus  
[NASA-CASE-XNP-06611] c07 N71-26102

**VIDEO DATA**  
TV camera output signal control system for digital spacecraft communication  
[NASA-CASE-XNP-01472] c14 N70-41807  
Transient video signal tape recorder with expanded playback  
[NASA-CASE-ARC-10003-1] c09 N71-25866  
Restoration and improvement of demodulated facsimile video signals  
[NASA-CASE-GSC-10185-1] c07 N72-12081  
Dual digital video switcher  
[NASA-CASE-KSC-10782-1] c33 N75-30431

**VIDEO EQUIPMENT**  
Video signal processing system for sampling video brightness levels  
[NASA-CASE-NPO-10140] c07 N71-24742  
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[NASA-CASE-KSC-10002] c10 N71-25865  
Teletypewriter video communication system and apparatus  
[NASA-CASE-XNP-06611] c07 N71-26102  
Video signal enhancement of signal component representing brightness of scene element in low contrast  
[NASA-CASE-NPO-10343] c07 N71-27341  
Circuitry for high input impedance video processor with high noise immunity  
[NASA-CASE-NPO-10199] c09 N72-17156  
Electronic video editor for switching video input signals to common output channel  
[NASA-CASE-KSC-10003] c10 N73-13235  
Video tape recorder with scan conversion playback for color television signals  
[NASA-CASE-NPO-10166-1] c07 N73-22076  
Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c35 N76-16391  
Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c45 N76-17656

**VIDICONS**  
Operation of vidicon tube for scanning spatial charge density pattern  
[NASA-CASE-XNP-06028] c09 N71-23189  
Device which separates and screens particles of soil samples for vidicon viewing in vacuum and reduced gravity environments  
[NASA-CASE-XNP-09770-3] c11 N71-27036

**VINYL POLYMERES**  
Method of producing output voltage from photovoltaic cell using poly-N-vinyl carbazole complexed with iodine  
[NASA-CASE-NPO-10373] c03 N71-18698

**VINYLDIENE**  
Preparation of dicyanoacetylene and vinylidene copolymers using organic compounds  
[NASA-CASE-XNP-03250] c06 N71-23500

**VISCOELASTICITY**  
Automated ball rebound resilience test equipment for determining viscoelastic properties of polymers  
[NASA-CASE-XLA-08254] c14 N71-26161

- Development and characteristics of parallel plate viscometer for determination of absolute viscosity of liquids and viscoelastic materials  
[NASA-CASE-NPO-11387] c14 N73-14429
- Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c37 N75-18573
- VISCOMETERS**  
Describing instrument capable of measuring true shear viscosity of liquids and viscoelastic materials:  
[NASA-CASE-XNP-09462] c14 N71-17584
- Development and characteristics of parallel plate viscometer for determination of absolute viscosity of liquids and viscoelastic materials  
[NASA-CASE-NPO-11387] c14 N73-14429
- VISCOSITY**  
Low density and low viscosity magnetic propellant for use under zero gravity conditions  
[NASA-CASE-XLE-01512] c12 N70-40124
- VISCOUS DAMPING**  
Shock and vibration damping device using temperature sensitive solid amorphous polymers  
[NASA-CASE-XAC-11225] c14 N69-27486
- Design and operation of viscous pendulum damper  
[NASA-CASE-XLA-02079] c12 N71-16894
- Mercury filled pendulum damper for controlling bending vibration induced by wind effects  
[NASA-CASE-LAR-10274-1] c14 N71-17626
- VISIBILITY**  
Controlled visibility device for simulating poor visibility conditions in training pilots in instrument landing and flight procedures  
[NASA-CASE-XPR-04147] c11 N71-10748
- VISORS**  
Anti-fog composition --- for prevention of fogging on surfaces such as space helmet visors and windshields  
[NASA-CASE-MSC-13530-2] c23 N75-14834
- VISUAL ACUITY**  
Multiparameter vision testing apparatus  
[NASA-CASE-MSC-13601-2] c54 N75-27759
- VISUAL AIDS**  
Optical instrument employing reticle having preselected visual response pattern formed thereon  
[NASA-CASE-ARC-10976-1] c74 N76-20959
- VISUAL CONTROL**  
Visual target luminaires for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c31 N69-27499
- VISUAL FIELDS**  
Automated visual sensitivity tester for determining visual field sensitivity and blind spot size  
[NASA-CASE-ARC-10329-1] c05 N73-26072
- VISUAL PERCEPTION**  
High pressure liquid flow sight assembly for wide temperature range applications including cryogenic fluids  
[NASA-CASE-XLE-02998] c14 N70-42074
- VISUAL STIMULI**  
Reaction tester for testing reaction to light stimuli  
[NASA-CASE-MSC-13604-1] c05 N73-13114
- VOICE**  
Real time analysis of voiced sounds  
[NASA-CASE-NPO-13465-1] c71 N75-13593
- VOICE COMMUNICATION**  
Position locating system for remote aircraft using voice communication and digital signals  
[NASA-CASE-GSC-10087-2] c21 N71-13958
- Earth satellite relay station for frequency multiplexed voice transmission  
[NASA-CASE-GSC-10118-1] c07 N71-24621
- Voice operated receiving and transmitting system for use in protective suits  
[NASA-CASE-KSC-10164] c07 N71-33108
- Technique for recovery of voice data from heat damaged magnetic tape  
[NASA-CASE-MSC-14219-1] c07 N74-27612
- Filtering device --- removing electromagnetic noise from voice communication signals  
[NASA-CASE-MFS-22729-1] c32 N76-21366
- VOICE DATA PROCESSING**  
Digital communication system  
[NASA-CASE-MSC-13912-1] c07 N74-30524
- VOIDS**  
Improved bimetallic junctions  
[NASA-CASE-LEW-11573-1] c26 N76-13267
- VOLATILITY**  
Apparatus for determining volatile condensable material present in polymeric products  
[NASA-CASE-XNP-09699] c06 N71-24607
- VOLT-AMPERE CHARACTERISTICS**  
Simulating voltage-current characteristic curves of solar cell panel with different operational parameters  
[NASA-CASE-XMS-01554] c10 N71-10578
- VOLTAGE AMPLIFIERS**  
Increasing power conversion efficiency of electronic amplifiers by power supply switching  
[NASA-CASE-XMS-00945] c09 N71-10798
- Bootstrap unloading circuits for sampling transducer voltage sources without drawing current  
[NASA-CASE-XNP-09768] c09 N71-12516
- RC networks with voltage amplifier, RC input circuit, and positive feedback  
[NASA-CASE-ARC-10020] c10 N72-17172
- Wide range analog to digital converter with variable gain amplifier  
[NASA-CASE-NPO-11018] c08 N72-21200
- VOLTAGE CONVERTERS (DC TO DC)**  
Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10792-1] c09 N74-11049
- The dc-to-dc converters employing staggered phase power switches with two loop control  
[NASA-CASE-NPO-13512-1] c33 N75-15876
- VOLTAGE GENERATORS**  
Pulsed energy power system for application of combustible gases to turbine controlling ac voltage generator  
[NASA-CASE-MSC-13112] c03 N71-11057
- Biotelemetry apparatus with dual voltage generators for implanting in animals  
[NASA-CASE-XAC-05706] c05 N71-12342
- Transistorized circuit for producing multiple slope voltage sweep  
[NASA-CASE-XMS-03542] c09 N71-28926
- Inductive-capacitive loops as load insensitive power converters  
[NASA-CASE-ERC-10268] c09 N72-25252
- VOLTAGE REGULATORS**  
Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c03 N69-21330
- Power control switching circuit using low voltage semiconductor controlled rectifiers for high voltage isolation  
[NASA-CASE-XNP-02713] c10 N69-39888
- Automatic measuring and recording of gain and zero drift characteristics of electronic amplifier  
[NASA-CASE-XMS-05562-1] c09 N69-39986
- Automatic control of voltage supply to direct current motor  
[NASA-CASE-XMS-04215-1] c09 N69-39987
- Design, development, and operating principles of power supply with starting circuit which is independent of voltage regulator  
[NASA-CASE-XMS-01991] c09 N71-21449
- High voltage divider system for attenuating high voltages to convenient levels suitable for introduction to measuring circuits  
[NASA-CASE-XLE-02008] c09 N71-21583
- Power supply with overload protection for series stage transistor  
[NASA-CASE-XMS-00913] c10 N71-23543
- Voltage controlled, variable frequency relaxation oscillator with MOSFET variable current feed  
[NASA-CASE-GSC-10022-1] c10 N71-25882
- Design and development of buck-boost voltage regulator circuit with additive or subtractive alternating current impressed on variable direct current source voltage  
[NASA-CASE-GSC-10735-1] c10 N71-26085
- Voltage range selection apparatus for sensing and applying voltages to electronic instruments without loading signal source  
[NASA-CASE-XMS-06497] c14 N71-26244
- Dissipative voltage regulator system for minimizing heat dissipation  
[NASA-CASE-GSC-10891-1] c10 N71-26626
- Power point tracker for maintaining optimal output voltage of power source  
[NASA-CASE-GSC-10376-1] c14 N71-27407

## VOLTAGE

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- Microwave power divider for providing variable output power to output waveguide in fixed waveguide system  
[NASA-CASE-NPO-11031] c07 N71-33606
- Relay controlled voltage switching unit for scanning circuitry of star tracker  
[NASA-CASE-NPO-11253] c09 N72-17157
- Switching type voltage regulator with relatively simple circuit arrangement  
[NASA-CASE-LEW-11005-1] c09 N72-21243
- Inductive-capacitive loops as load insensitive power converters  
[NASA-CASE-ERC-10268] c09 N72-25252
- Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10792-1] c09 N74-11049
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- Low distortion automatic phase control circuit --- voltage controlled phase shifter  
[NASA-CASE-MPS-21671-1] c10 N74-22885
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[NASA-CASE-NPO-13512-1] c33 N75-15876
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Voltage monitoring system  
[NASA-CASE-KSC-10736-1] c33 N75-19521
- VOMITING**  
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[NASA-CASE-XLE-05230-2] c14 N73-13417
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[NASA-CASE-XLE-00164] c15 N70-36411
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[NASA-CASE-XMS-10984-1] c10 N71-19417
- Unsaturating magnetic core transformer design with warning signal for electrical power processing equipment  
[NASA-CASE-ERC-10125] c09 N71-24893
- Electrical failure detector in solid rocket propellant motor insulation against thermal degradation by fuel grain  
[NASA-CASE-XMP-03968] c14 N71-27186
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[NASA-CASE-LAR-10545-1] c09 N72-21244
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[NASA-CASE-NPO-11307-1] c10 N73-30205
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[NASA-CASE-XMS-06761] c05 N69-23192
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[NASA-CASE-MPS-20922] c31 N72-20840
- Pressurized tank for feeding liquid waste into processing equipment  
[NASA-CASE-LAR-10365-1] c05 N72-27102
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[NASA-CASE-MPS-20922-1] c15 N74-22136
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[NASA-CASE-LAR-11071-1] c35 N75-19611
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[NASA-CASE-MSC-14640-1] c54 N76-14804
- WASTE ENERGY UTILIZATION**  
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[NASA-CASE-XNP-05381] c09 N71-20842
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- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-1] c37 N76-16446
- Solar photolysis of water  
[NASA-CASE-NPO-13675-1] c44 N76-18680
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[NASA-CASE-LAR-11361-1] c44 N76-19564
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[NASA-CASE-MPS-21115-1] c05 N74-12779
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[NASA-CASE-NPO-13567-1] c37 N75-22746
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[NASA-CASE-XLA-01552] c07 N71-11284
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[NASA-CASE-XLA-00195] c02 N70-38009
- Spacecraft design with single point aerodynamic and hydrodynamic stability for emergency transport of men from space station to splashdown  
[NASA-CASE-MSC-13281] c31 N72-18859
- WATER MANAGEMENT**  
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[NASA-CASE-MSC-10960-1] c03 N71-24718
- WATER POLLUTION**  
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WEIGHT (MASS)

## WATER RECLAMATION

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Iodine generator for reclaimed water purification  
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## WATER TEMPERATURE

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[NASA-CASE-XAC-00812] c14 N71-15598

## WATER TREATMENT

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[NASA-CASE-MSC-10960-1] c03 N71-24718  
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Iodine generator for reclaimed water purification  
[NASA-CASE-MSC-14632-1] c54 N75-25594

## WATER VAPOR

Equipment for measuring partial water vapor pressure in gas tank  
[NASA-CASE-XMS-01618] c14 N71-20741

## WATERPROOFING

Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c15 N74-21063

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Distributed feedback acoustic surface wave oscillator  
[NASA-CASE-NPO-13673-1] c33 N75-32323

## WAVE FRONT RECONSTRUCTION

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## WAVE GENERATION

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[NASA-CASE-XLA-00112] c11 N70-33287  
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[NASA-CASE-XMS-01315] c09 N70-41675  
Sign wave generation simulator for variable amplitude, frequency, damping, and phase pulses for oscilloscope display  
[NASA-CASE-NPO-10251] c10 N71-27365  
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## WAVE REFLECTION

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[NASA-CASE-ARC-10009-1] c15 N71-17822  
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[NASA-CASE-GSC-10949-1] c07 N71-28965

## WAVE SCATTERING

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[NASA-CASE-MFS-20243] c23 N73-13662

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[NASA-CASE-XNP-01383] c09 N71-10659  
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[NASA-CASE-FRC-10010] c10 N71-24862  
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[NASA-CASE-MSC-12395] c09 N72-25257  
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[NASA-CASE-MSC-12428-1] c10 N73-25240

Speech analyzer --- which provides information regarding amplitude, frequency, and phase of a speech waveform  
[NASA-CASE-GSC-11898-1] c32 N75-22563  
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[NASA-CASE-MSC-14557-1] c32 N76-16249

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[NASA-CASE-NPO-10301] c07 N72-11148  
Dielectric loaded aperture antenna with directive radiation pattern from waveguide  
[NASA-CASE-LAR-11084-1] c09 N73-12216

## WAVEGUIDE FILTERS

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[NASA-CASE-NPO-11031] c07 N71-33606

## WAVEGUIDE WINDOWS

Broadband microwave waveguide window to compensate dielectric material filling  
[NASA-CASE-XNP-08880] c09 N71-24808

## WAVEGUIDES

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[NASA-CASE-XNP-03134] c07 N71-10676  
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[NASA-CASE-XNP-05219] c16 N71-15550  
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[NASA-CASE-ERC-10011] c07 N71-29065  
Microwave waveguide mixer  
[NASA-CASE-ERC-10179] c07 N72-20141  
Waveguide, thin film window and microwave irises  
[NASA-CASE-LAR-10513-1] c07 N72-25170  
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[NASA-CASE-LAR-10511-1] c09 N72-29172  
Resonant waveguide stark cell --- using microwave spectrometers  
[NASA-CASE-LAR-11352-1] c33 N75-26245  
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[NASA-CASE-NPO-13544-1] c36 N76-18428

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[NASA-CASE-XLE-00011] c14 N70-41946  
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[NASA-CASE-ERC-10248] c14 N72-17323  
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[NASA-CASE-ERC-10174] c14 N72-25409  
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[NASA-CASE-MFS-20675] c26 N73-26751  
Dual wavelength scanning Doppler velocimeter --- without perturbation of flow fields  
[NASA-CASE-ARC-10637-1] c35 N75-16783  
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[NASA-CASE-ARC-10370-1] c36 N75-31426

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[NASA-CASE-NPO-13690-1] c27 N76-13294

## WEATHERPROOFING

Weatherproof helix antenna  
[NASA-CASE-YKS-08485] c07 N71-19493

## WEBS (SHEETS)

Method and apparatus for measuring web material wound on a reel  
[NASA-CASE-GSC-11902-1] c35 N75-22687

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Method and apparatus for splitting a beam of energy  
[NASA-CASE-GSC-12083-1] c36 N76-15451

## WEIGHT (MASS)

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## WEIGHT INDICATORS

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impact energy absorption for damping wind induced oscillations of tall stacks, antennas, and umbilical towers  
[NASA-CASE-LAR-10193-1] c15 N71-27146

**WEIGHT INDICATORS**  
Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c14 N74-26945

**WEIGHT MEASUREMENT**  
Weighing and recording device for obtaining precise automatic record of small changes in force  
[NASA-CASE-XLA-02605] c14 N71-10773  
Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c14 N74-26945

**WEIGHTLESS FLUIDS**  
Fluid mass sensor --- apparatus and method for measuring fluid mass in weightless condition  
[NASA-CASE-MSC-14653-1] c35 N75-13218

**WEIGHTLESSNESS**  
Apparatus for cryogenic liquid storage with heat transfer reduction and for liquid transfer at zero gravity conditions  
[NASA-CASE-XLE-00345] c15 N70-38020  
Liquid-gas separator adapted for use in zero gravity environment -- drawings  
[NASA-CASE-XMS-01624] c15 N70-40062  
Expulsion and measuring device for determining quantity of liquid in tank under conditions of weightlessness  
[NASA-CASE-XMS-01546] c14 N70-40233  
Collapsible auxiliary tank for restarting liquid propellant rocket motors under zero gravity  
[NASA-CASE-XNP-01390] c28 N70-41275  
Absorbent apparatus for separating gas from liquid-gas stream used in environmental control under zero gravity conditions  
[NASA-CASE-XMS-01492] c05 N70-41297  
Potable water reclamation from human wastes in zero-G environment  
[NASA-CASE-XLA-03213] c05 N71-11207  
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[NASA-CASE-XLE-00586] c15 N71-15968  
Cable suspension and inclined walkway system for simulating reduced or zero gravity environments  
[NASA-CASE-XLA-01787] c11 N71-16028  
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[NASA-CASE-MFS-12750] c27 N71-16223  
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[NASA-CASE-MFS-11132] c15 N71-17649  
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[NASA-CASE-XMS-06236] c14 N71-21007  
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[NASA-CASE-XMF-06515] c14 N71-23227  
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[NASA-CASE-ARC-10100-1] c05 N71-24738  
Device which separates and screens particles of soil samples for vidicon viewing in vacuum and reduced gravity environments  
[NASA-CASE-XNP-09770-3] c11 N71-27036  
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[NASA-CASE-XMF-09902] c15 N72-11387  
Manipulator for remote handling in zero gravity environment  
[NASA-CASE-MFS-14405] c15 N72-28495  
Apparatus for mixing two or more liquids under zero gravity conditions  
[NASA-CASE-LAR-10195-1] c15 N73-19458  
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[NASA-CASE-KSC-10626] c14 N73-27378  
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[NASA-CASE-ARC-10722-1] c51 N75-25503  
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[NASA-CASE-LAR-11110-1] c34 N75-26282  
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[NASA-CASE-MFS-23226-1] c76 N75-33861  
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[NASA-CASE-MSC-12611-1] c12 N76-15189

**WEIGHTLESSNESS SIMULATION**  
Reduced gravity liquid configuration simulator to study propellant behavior in rocket fuel tanks  
[NASA-CASE-XLE-02624] c12 N69-39988  
Apparatus for measuring human body mass in zero or reduced gravity environment  
[NASA-CASE-XMS-03371] c05 N70-42000  
Harness assembly adapted to support man on ground based apparatus which simulates weightlessness  
[NASA-CASE-MFS-14671] c05 N71-12341  
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[NASA-CASE-MSC-13972-1] c05 N74-10975

**WELD STRENGTH**  
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[NASA-CASE-MSC-19372-1] c37 N75-11351  
Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c37 N75-19683

**WELD TESTS**  
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[NASA-CASE-XNP-02588] c15 N71-18613  
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[NASA-CASE-ARC-10176-1] c15 N72-21464

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Apparatus for welding blades to rotors  
[NASA-CASE-LEW-10533-2] c15 N74-11300  
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[NASA-CASE-MFS-20767-1] c15 N74-15130  
Flanged major modular assembly jug  
[NASA-CASE-MSC-19372-1] c37 N75-11351  
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[NASA-CASE-MFS-22907-1] c26 N76-18257

**WELDED STRUCTURES**  
Flanged major modular assembly jug  
[NASA-CASE-MSC-19372-1] c37 N75-11351  
Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c37 N75-19683  
Improved bimetallic junctions  
[NASA-CASE-LEW-11573-1] c26 N76-13267

**WELDING**  
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[NASA-CASE-XMF-00640] c15 N70-39924  
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[NASA-CASE-XMF-00722] c15 N70-40204  
Apparatus for welding sheet material --- butt joints  
[NASA-CASE-XMS-01330] c37 N75-27376

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[NASA-CASE-XMF-03287] c15 N71-15607  
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[NASA-CASE-XMF-01730] c15 N71-23050  
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[NASA-CASE-XMF-02330] c15 N71-23798  
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[NASA-CASE-XMF-07069] c15 N71-23815

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- cell battery, using semiconductor light emitter and photodetector  
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[NASA-CASE-XMS-03537] c15 N69-21471
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[NASA-CASE-MFS-12827] c14 N71-17656  
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[NASA-CASE-XLA-02810] c14 N71-25901  
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[NASA-CASE-NPO-11304] c14 N73-26430
- WHISKER COMPOSITES**  
Composites reinforced with short metal fibers or whiskers and having high tensile strength  
[NASA-CASE-XLE-00228] c17 N70-38490  
Method of growing composites of the type exhibiting the Soret effect --- improve structure of eutectic alloys, crystals  
[NASA-CASE-MFS-22926-1] c25 N75-19380
- WHISKERS (SINGLE CRYSTALS)**  
Catalyst for increased growth of boron carbide crystal whiskers  
[NASA-CASE-XHQ-03903] c15 N69-21922
- WICKS**  
Method of forming a wick for a heat pipe  
[NASA-CASE-NPO-13391-1] c33 N74-19584
- WIDE ANGLE LENSES**  
Wide angle eyepiece with long eye-relief distance  
[NASA-CASE-XMS-06056-1] c23 N71-24857
- WINCHES**  
Design and characteristics of device for showing amount of cable payed out from winch and load imposed  
[NASA-CASE-MSC-12052-1] c15 N71-24599
- WIND DIRECTION**  
Wind sensor --- remote measurement of wind velocity, temperature, and direction  
[NASA-CASE-NPO-13462-1] c35 N75-16807
- WIND EFFECTS**  
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[NASA-CASE-LAR-10274-1] c14 N71-17626
- WIND MEASUREMENT**  
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[NASA-CASE-XMP-14032] c20 N71-16340  
Maxometers for measuring peak wind speeds during severe environmental conditions  
[NASA-CASE-MFS-20916] c14 N73-25460  
Wind sensor --- remote measurement of wind velocity, temperature, and direction  
[NASA-CASE-NPO-13462-1] c35 N75-16807  
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[NASA-CASE-MFS-23362-1] c47 N76-13701
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[NASA-CASE-XLA-02081] c20 N71-16281
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[NASA-CASE-XLA-00112] c11 N70-33287  
Electric arc device for minimizing electrode ablation and heating gases to supersonic or hypersonic wind tunnel temperatures  
[NASA-CASE-XAC-00319] c25 N70-41628  
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[NASA-CASE-XLA-00939] c11 N71-15926  
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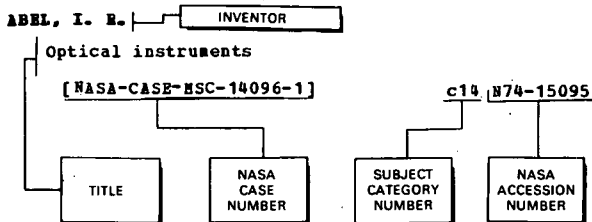
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- Parallel-plate viscometer with double diaphragm  
suspension  
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- Preparation of alkali metal dispersions  
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- Wind sensor  
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 [NASA-CASE-NPO-11317-2] c16 N74-13205  
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 [NASA-CASE-NPO-11432-2] c14 N74-15090  
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 [NASA-CASE-NPO-11156-2] c33 N75-31331  
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 [NASA-CASE-MPS-20523] c14 N72-27412  
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Varying density composite structure		[NASA-CASE-XLA-00806]	c02 N70-34858
[NASA-CASE-LAR-11181-1]	c39 N75-31479	Landing arrangement for aerospace vehicle Patent	
LINFORD, R. E. P.		[NASA-CASE-XLA-00805]	c31 N70-38010
Flame detector operable in presence of proton radiation		LOFTIN, L. R., JR.	
[NASA-CASE-MPS-21577-1]	c03 N74-29410	Wind tunnel airstream oscillating apparatus Patent	
LING, S. C.		[NASA-CASE-XLA-00112]	c11 N70-33287
Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon Patent		LOH, G. H.	
[NASA-CASE-XGS-01881]	c09 N70-40123	Medical subject monitoring systems	
LINGLE, J. T.		[NASA-CASE-MSC-14180-1]	c52 N76-14757
Frequency control network for a current feedback oscillator Patent		LOHE, J. J.	
[NASA-CASE-GSC-10041-1]	c10 N71-19418	Variable stiffness polymeric damper	
Static inverter Patent		[NASA-CASE-XAC-11225]	c14 N69-27486
[NASA-CASE-XGS-05289]	c09 N71-19470	LOKESON, D. C.	
LIPANOVICH, M. I.		Voltage to frequency converter Patent	
Medical subject monitoring systems		[NASA-CASE-GSC-10022-1]	c10 N71-25882
[NASA-CASE-MSC-14180-1]	c52 N76-14757	X-Y alphanumeric character generator for oscilloscopes	
LIPKE, D. W.		[NASA-CASE-GSC-11582-1]	c33 N75-19517
Doppler frequency spread correction device for multiplex transmissions		Speech analyzer	
[NASA-CASE-XGS-02749]	c07 N69-39978	[NASA-CASE-GSC-11898-1]	c32 N75-22563
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Television signal scan rate conversion system Patent		Attitude control for spacecraft Patent	
[NASA-CASE-XMS-07168]	c07 N71-11300	[NASA-CASE-XNP-02982]	c31 N70-41855
Burst synchronization detection system Patent		LONG, B. R.	
[NASA-CASE-XMS-05605-1]	c10 N71-19468	Precipitation detector Patent	
Data storage, image tube type		[NASA-CASE-XLA-02619]	c10 N71-26334
[NASA-CASE-MSC-14053-1]	c08 N74-12888	LONG, R. A.	
Method and system for producing chroma signals		High temperature compositions Patent	
[NASA-CASE-MSC-14683-1]	c74 N75-33835	[NASA-CASE-XMS-00370]	c17 N71-20941
LIPPIIT, M. W., JR.		LONG, W. C.	
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[NASA-CASE-XMS-02872]	c05 N69-21925	[NASA-CASE-LAR-10730-1]	c10 N74-10223
Instrument for use in performing a controlled Valsalva maneuver Patent		Rotating joint signal coupler	
[NASA-CASE-XMS-01615]	c05 N70-41329	[NASA-CASE-LAR-11264-1]	c33 N75-27261
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[NASA-CASE-XLA-07390]	c15 N71-18616	[NASA-CASE-HQN-10780]	c14 N71-30265
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Lightning current measuring systems		Foam generator Patent	
[NASA-CASE-MSC-10807-1]	c33 N75-26246	[NASA-CASE-XLA-00838]	c03 N70-36778
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[NASA-CASE-XNP-06092]	c07 N71-24612	[NASA-CASE-LAR-10961-1]	c15 N73-12496
Phototransistor imaging system		LOOP, R. W.	
[NASA-CASE-MPS-20809]	c23 N73-13660	Absolute focus lock for microscopes	
LISTER, J. L.		[NASA-CASE-LAR-10184]	c14 N72-22445
Thermally conductive polymers		LOOSE, J. D.	
[NASA-CASE-GSC-11304-1]	c06 N72-21105	Steady state thermal radiometers	
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Apparatus and method for separating a semiconductor wafer Patent		LOPEZ, A. E.	
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[NASA-CASE-NPO-10348]	c10 N71-12554	Encoder/decoder system for a rapidly	
Broadband microwave waveguide window Patent		synchronizable binary code Patent	
[NASA-CASE-XNP-08880]	c09 N71-24808	[NASA-CASE-NPO-10342]	c10 N71-33407
Rotary vane attenuator wherein rotor has		STIGBERG, J. D.	
orthogonally disposed resistive and dielectric		Optical rotational sensor	
cards		[NASA-CASE-KSC-10752-1]	c15 N73-27407
[NASA-CASE-NPO-11418-1]	c14 N73-13420	Signal conditioner test set	
STENGEL, R. F.		[NASA-CASE-KSC-10750-1]	c35 N75-12270
Wind velocity probing device and method Patent		STINE, H. A.	
[NASA-CASE-XLA-02081]	c20 N71-16281	Electric arc apparatus Patent	
STENLUND, S. J.		[NASA-CASE-XAC-01677]	c09 N71-20816
Rotating mandrel for assembly of inflatable		STIRN, R. J.	
devices Patent		High voltage, high current Schottky barrier	
[NASA-CASE-XLA-04143]	c15 N71-17687	solar cell	
Traveling sealer for contoured table Patent		[NASA-CASE-NPO-13482-1]	c03 N74-30448
[NASA-CASE-XLA-01494]	c15 N71-24164	STOCKARD, R. R.	
STEPHENS, D. G.		Semiconductor p-n junction stress and strain	
Flexible ring slcsh damping baffle Patent		sensor	
[NASA-CASE-LAR-10317-1]	c32 N71-16103	[NASA-CASE-XLA-04980]	c09 N69-27422
Instrument for measuring the dynamic behavior of		Method of making semiconductor p-n junction	
liquids Patent		stress and strain sensor	
[NASA-CASE-XLA-05541]	c12 N71-26387	[NASA-CASE-XLA-04980-2]	c14 N72-28438
Active vibration isolator for flexible bodies		STOKES, C. S.	
Patent		Barium release system	
[NASA-CASE-LAR-10106-1]	c15 N71-27169	[NASA-CASE-LAR-10670-1]	c06 N73-30097
Active air cushion control system minimizing		Rocket having barium release system to create	
vertical cushion response		ion clouds in the upper atmosphere	

[NASA-CASE-LAR-10670-2]	c31 N74-27360	[NASA-CASE-GSC-11077-1]	c02 N73-13008
STOLLER, P. W.		STUDER, P. A.	
Reversible motion drive system Patent		Electronic beam switching commutator Patent	
[NASA-CASE-NPO-10173]	c15 N71-24696	[NASA-CASE-XGS-01451]	c09 N71-10677
STONE, P. A.		Direct current motor with stationary armature and field Patent	
Synchronous servo loop control system Patent		[NASA-CASE-XGS-05290]	c09 N71-25999
[NASA-CASE-XNP-03744]	c10 N71-20448	Helical recorder arrangement for multiple channel recording on both sides of the tape	
STONE, H. W., JR.		[NASA-CASE-GSC-10614-1]	c09 N72-11224
Wing upper surface flap		Electric motive machine including magnetic bearing	
[NASA-CASE-LAR-11140-1]	c02 N73-20008	[NASA-CASE-XGS-07805]	c15 N72-33476
STONE, L. P.		Magnetic bearing	
Articulated multiple couch assembly Patent		[NASA-CASE-GSC-11079-1]	c37 N75-18574
[NASA-CASE-MSC-11253]	c05 N71-12343	Three phase full wave dc motor decoder	
STONE, S. E.		[NASA-CASE-GSC-11824-1]	c33 N75-27254
Fluid sample collector Patent		Magnetic bearing system	
[NASA-CASE-XMS-06767-1]	c14 N71-20435	[NASA-CASE-GSC-11978-1]	c37 N75-27386
STORI, A. W.		STUMP, E. C., JR.	
System for indicating direction of intruder aircraft		Hydroxy terminated perfluoro ethers Patent	
[NASA-CASE-ERC-10226-1]	c14 N73-16483	[NASA-CASE-NPO-10768]	c06 N71-27254
Display system		Perfluoro polyether acyl fluorides	
[NASA-CASE-ERC-10350]	c14 N73-20474	[NASA-CASE-NPO-10765]	c06 N72-20121
STRAIGHT, D. M.		Polyurethane resins from hydroxy terminated perfluoro ethers	
Rocket motor system Patent		[NASA-CASE-NPO-10768-2]	c06 N72-27144
[NASA-CASE-XLE-00323]	c28 N70-38505	Highly fluorinated polyurethanes	
Gas turbine exhaust nozzle		[NASA-CASE-NPO-10767-2]	c06 N72-27151
[NASA-CASE-LEW-11569-1]	c28 N74-15453	Highly fluorinated polyurethanes	
STRAND, L. D.		[NASA-CASE-NPO-10767-1]	c06 N73-33076
Solid propellant rocket motor		STURGIS, A. C.	
[NASA-CASE-NPO-11559]	c28 N73-24784	Multiparameter vision testing apparatus	
STRANGE, M. G.		[NASA-CASE-MSC-13601-2]	c54 N75-27759
Position sensing device employing misaligned magnetic field generating and detecting apparatus Patent		STURN, R. G.	
[NASA-CASE-XGS-07514]	c23 N71-16099	Self-recording portable soil penetrometer	
Self-regulating proportionally controlled heating apparatus and technique		[NASA-CASE-MFS-20774]	c14 N73-19420
[NASA-CASE-GSC-11752-1]	c77 N75-20140	TURNAN, J. C.	
STRASS, H. K.		Pulsed differential comparator circuit Patent	
Motion picture camera for optical pyrometry Patent		[NASA-CASE-XLE-03804]	c10 N71-19471
[NASA-CASE-XLA-00062]	c14 N70-33254	STYLES, C. M.	
Light intensity modulator controller Patent		Spherical solid-propellant rocket motor Patent	
[NASA-CASE-XMS-04300]	c09 N71-19479	[NASA-CASE-XLA-00105]	c28 N70-33331
STREED, E. R.		SUDEY, J.	
Solar cell Patent		Low speed phaselock speed control system	
[NASA-CASE-ARC-10050]	c03 N71-33409	[NASA-CASE-GSC-11127-1]	c09 N75-24758
STROM, T. H.		SULLIVAN, D. B.	
Spiral groove seal		Electrical insulating layer process	
[NASA-CASE-XLE-10326-2]	c15 N72-29488	[NASA-CASE-LEW-10489-1]	c15 N72-25447
Spiral groove seal		SULLIVAN, E. M.	
[NASA-CASE-XLE-10326-4]	c15 N74-15125	Ablation article and method	
STRONG, I. J.		[NASA-CASE-LAR-10439-1]	c33 N73-27796
Stirring apparatus for plural test tubes Patent		SULLIVAN, J. L.	
[NASA-CASE-XAC-06956]	c15 N71-21177	Self-contained breathing apparatus	
STRONG, J. P., III		[NASA-CASE-MSC-14733-1]	c54 N75-13534
Two-dimensional radiant energy array computers and computing devices		SULLIVAN, T. E.	
[NASA-CASE-GSC-11839-2]	c60 N76-18803	Waveguide mixer	
Two-dimensional radiant energy array computers and computing devices		[NASA-CASE-ERC-10179]	c07 N72-20141
[NASA-CASE-GSC-11839-3]	c60 N76-18804	SUNIDA, J. T.	
STROUP, E. R.		Miniature multichannel biotelemeter system	
Electrochemical coulometer and method of forming same Patent		[NASA-CASE-NPO-13065-1]	c05 N74-26625
[NASA-CASE-XGS-05434]	c03 N71-20491	SUNNBERFIELD, D. G.	
STROLL, G.		Wind tunnel model and method	
Solid state television camera system Patent		[NASA-CASE-LAR-10812-1]	c11 N74-17955
[NASA-CASE-XMF-06092]	c07 N71-24612	SUNNERS, R. H.	
STRUZIK, E. A.		Geneva mechanism	
Ceramic fiber insulating material and methods of producing same		[NASA-CASE-NPO-13281-1]	c37 N75-13266
[NASA-CASE-MSC-14795-1]	c27 N76-15314	SUPLIFF, J. D.	
STUART, J. L.		Wing deployment method and apparatus Patent	
Automated fluid chemical analyzer Patent		[NASA-CASE-XMS-00907]	c02 N70-41630
[NASA-CASE-XNP-09451]	c06 N71-26754	SWAIN, R. L.	
STUART, J. W.		Spherical solid-propellant rocket motor Patent	
Fire resistant coating composition Patent		[NASA-CASE-XLA-00105]	c28 N70-33331
[NASA-CASE-GSC-10072]	c18 N71-14014	SWANN, R. T.	
Diffuse reflective coating		Sandwich panel construction Patent	
[NASA-CASE-GSC-11214-1]	c06 N73-13128	[NASA-CASE-XLA-00349]	c33 N70-37979
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Panelized high performance multilayer insulation Patent		[NASA-CASE-LAR-10121-1]	c15 N71-26721
[NASA-CASE-MFS-14023]	c33 N71-25351	SWEAT, J. C.	
Cryogenic thermal insulation Patent		Emergency escape system Patent	
[NASA-CASE-XMF-05046]	c33 N71-28892	[NASA-CASE-XKS-07814]	c15 N71-27067
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System for stabilizing torque between a balloon and gondola		Compensating radiometer	
		[NASA-CASE-XLA-04556]	c14 N69-27484
		Spherical measurement device	
		[NASA-CASE-XLA-06683]	c14 N72-28436
		SWINGLE, R. L.	
		Compact solar still Patent	
		[NASA-CASE-XMS-04533]	c15 N71-23086

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having a precisely shaped slit  
[NASA-CASE-LAR-10409-1] c15 N74-21059

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[NASA-CASE-XNP-00745] c10 N71-28960

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[NASA-CASE-XGS-04808] c03 N69-25146  
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[NASA-CASE-MFS-11204] c14 N71-29134

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[NASA-CASE-GSC-11893-1] c09 N75-25966

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[NASA-CASE-MFS-20775-1] c31 N75-12161

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[NASA-CASE-XMS-01906] c31 N70-41373  
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[NASA-CASE-NPO-11941-1] c10 N73-27171

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[NASA-CASE-MFS-21931-1] c37 N75-26372

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[NASA-CASE-MSC-13789-1] c11 N73-32152

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[NASA-CASE-MSC-14757-1] c37 N76-13496

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method of operation Patent  
[NASA-CASE-XLE-01645] c03 N71-20904  
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[NASA-CASE-XLA-08491] c05 N69-21380  
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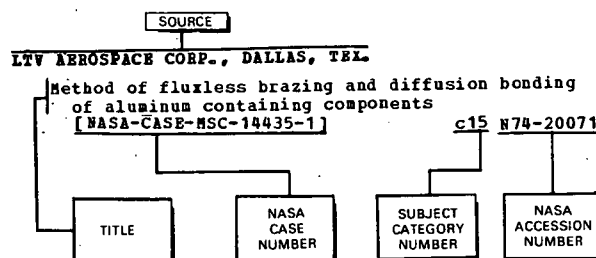


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### Section 2

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**ELECTRIC STORAGE BATTERY CO., RALEIGH, N.C.**  
Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c03 N71-29129

**ELECTRO-OPTICAL SYSTEMS, INC., PASADENA, CALIF.**  
Focussing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c09 N71-10618  
Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c03 N71-11052  
Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c17 N71-15468  
Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c15 N71-20440  
Particle detection apparatus including a ballistic pendulum Patent  
[NASA-CASE-XMS-04201] c14 N71-22990  
Polarity sensitive circuit Patent  
[NASA-CASE-XNP-00952] c10 N71-23271  
Ion engine casing construction and method of making same Patent  
[NASA-CASE-XNP-06942] c28 N71-23293  
Material handling device Patent  
[NASA-CASE-XNP-09770-3] c11 N71-27036  
Screen particle separator  
[NASA-CASE-XNP-09770-2] c15 N72-22483

**ELECTRONIC IMAGE SYSTEMS CORP., CAMBRIDGE, MASS.**  
Drying apparatus for photographic sheet material  
[NASA-CASE-GSC-11074-1] c14 N73-28489

**ESB, INC., RALEIGH, N.C.**  
Storage battery comprising negative plates of a wedge shaped configuration  
[NASA-CASE-NPO-11806-1] c03 N74-19693

**ESB, INC., YARDLEY, PA.**  
Electric storage battery  
[NASA-CASE-NPO-11021] c03 N72-20032

**EWEN KNIGHT CORP., EAST HATICK, MASS.**  
Method and means for providing an absolute power measurement capability Patent  
[NASA-CASE-ERC-11020] c14 N71-26774

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**FAIRCHILD HILLER CORP., GERMANTOWN, MD.**  
Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c14 N71-27325  
Space simulation and radiative property testing system and method Patent  
[NASA-CASE-MFS-20096] c14 N71-30026

Thermal control system for a spacecraft modular housing  
 [NASA-CASE-GSC-11018-1] c31 N73-30829  
**FEDERAL-MOGUL CORP., LOS ALAMITOS, CALIF.**  
 Hydraulic casting of liquid polymers Patent  
 [NASA-CASE-XNP-07659] c06 N71-22975  
**FLORIDA UNIV., GAINESVILLE.**  
 Nonequilibrium radiation nuclear reactor  
 [NASA-CASE-HQN-10841-1] c73 N75-22108  
**FMC CORP., NEW YORK.**  
 Decomposition unit Patent  
 [NASA-CASE-XMS-00583] c28 N70-38504  
**FOOTHILL COLLEGE, LOS ALTOS HILLS, CALIF.**  
 Electrical conductivity cell and method for fabricating the same  
 [NASA-CASE-ARC-10810-1] c33 N76-19339  
**FORD MOTOR CO., DEARBORN, MICH.**  
 Omnidirectional acceleration device Patent  
 [NASA-CASE-HQN-10780] c14 N71-30265

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**GARRETT CORP., LOS ANGELES, CALIF.**

Relief valve  
 [NASA-CASE-XMS-05894-1] c15 N69-21924  
 Portable environmental control system Patent  
 [NASA-CASE-XMS-09632-1] c05 N71-11203  
 Dual latching solenoid valve Patent  
 [NASA-CASE-XMS-05890] c09 N71-23191  
 Water management system and an electrolytic cell therefor Patent  
 [NASA-CASE-MSC-10960-1] c03 N71-24718  
 Low cycle fatigue testing machine  
 [NASA-CASE-LAR-10270-1] c32 N72-25877  
 Process for separation of dissolved hydrogen from water by use of palladium and process for coating palladium with palladium black  
 [NASA-CASE-MSC-13335-1] c06 N72-31140  
 Flexible joint for pressurizable garment  
 [NASA-CASE-MSC-11072] c05 N74-32546  
 Gas compression analysis  
 [NASA-CASE-MSC-14757-1] c37 N76-13496  
**GCA CORP., BEDFORD, MASS.**  
 Analytical photoionization mass spectrometer with an argon gas filter between the light source and monochromator Patent  
 [NASA-CASE-LAR-10180-1] c06 N71-13461  
**GENERAL DYNAMICS CORP., SAN DIEGO, CALIF.**  
 Light radiation direction indicator with a baffle of two parallel grids  
 [NASA-CASE-XNP-03930] c14 N69-24331  
 Method and apparatus for attaching physiological monitoring electrodes Patent  
 [NASA-CASE-XFR-07658-1] c05 N71-26293  
 Driving lamps by induction  
 [NASA-CASE-MFS-21214-1] c09 N73-30181  
**GENERAL DYNAMICS/ASTRONAUTICS, SAN DIEGO, CALIF.**  
 Determination of spot weld quality Patent  
 [NASA-CASE-XNP-02588] c15 N71-18613  
 Pressure transducer calibrator Patent  
 [NASA-CASE-XNP-01660] c14 N71-23036  
 Plating nickel on aluminum castings Patent  
 [NASA-CASE-XNP-04148] c17 N71-24830  
**GENERAL DYNAMICS/CONVAIR, SAN DIEGO, CALIF.**  
 Signal generator  
 [NASA-CASE-XNP-05612] c09 N69-21468  
 Separation nut Patent  
 [NASA-CASE-XGS-01971] c15 N71-15922  
 Zero gravity separator Patent  
 [NASA-CASE-XLE-00586] c15 N71-15968  
 Catalyst cartridge for carbon dioxide reduction unit  
 [NASA-CASE-LAR-10551-1] c06 N74-12813  
 An improved heat exchanger  
 [NASA-CASE-MFS-22991-1] c34 N75-10366  
**GENERAL ELECTRIC CO., PHILADELPHIA, PA.**  
 Catalyst for growth of boron carbide single crystal whiskers  
 [NASA-CASE-XHQ-03903] c15 N69-21922  
 Didymium hydrate additive to nickel hydroxide electrodes Patent  
 [NASA-CASE-XGS-03505] c03 N71-10608  
 Bismuth-lead coatings for gas bearings used in atmospheric environments and vacuum chambers Patent  
 [NASA-CASE-XGS-02011] c15 N71-20739  
 Automatic control of liquid cooling garment by cutaneous and external auditory meatus temperatures

[NASA-CASE-MSC-13917-1] c05 N72-15098  
 Method for measuring cutaneous sensory perception  
 [NASA-CASE-MSC-13609-1] c05 N72-25122  
 Reaction tester  
 [NASA-CASE-MSC-13604-1] c05 N73-13114  
 Air conditioned suit  
 [NASA-CASE-LAR-10076-1] c05 N73-20137  
 Compton scatter attenuation gamma ray spectrometer  
 [NASA-CASE-MFS-21441-1] c14 N73-30392  
 Inverter ratio failure detector  
 [NASA-CASE-NPO-13160-1] c14 N74-18090  
 Electrophoretic sample insertion  
 [NASA-CASE-MFS-21395-1] c14 N74-26948  
 Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
 [NASA-CASE-MFS-21394-1] c12 N74-27744  
 Fluid mass sensor  
 [NASA-CASE-MSC-14653-1] c35 N75-13218  
 Multiparameter vision testing apparatus  
 [NASA-CASE-MSC-13601-2] c54 N75-27759  
 Automatic bio waste sampling  
 [NASA-CASE-MSC-14640-1] c54 N76-14804  
**GENERAL ELECTRIC CO., PLEASANTON, CALIF.**  
 Method of making a cermet Patent  
 [NASA-CASE-LEW-10219-1] c18 N71-28729  
**GENERAL ELECTRIC CO., SCHEMECTADY, N.Y.**  
 Superconductive accelerometer Patent  
 [NASA-CASE-XMP-01099] c14 N71-15969  
 Remote manipulator system  
 [NASA-CASE-MFS-22022-1] c37 N76-15460  
 Automatic transponder  
 [NASA-CASE-GSC-12075-1] c32 N76-19318  
**GENERAL ELECTRIC CO., UTICA, N.Y.**  
 Method of determining bond quality of power transistors attached to substrates  
 [NASA-CASE-MFS-21931-1] c37 N75-26372  
**GENERAL MOTORS CORP., DETROIT, MICH.**  
 Hermetic sealed vibration damper Patent  
 [NASA-CASE-MSC-10959] c15 N71-26243  
**GENERAL MOTORS CORP., MILWAUKEE, WIS.**  
 Adjustable tension wire guide Patent  
 [NASA-CASE-XMS-02383] c15 N71-15918  
**GENERAL MOTORS CORP., SANTA BARBARA, CALIF.**  
 Resilient wheel Patent  
 [NASA-CASE-MFS-13929] c15 N71-27091  
**GENERAL PRECISION SYSTEMS, INC., LITTLE FALLS, N.J.**  
 Fluidic-thermochromic display device Patent  
 [NASA-CASE-ERC-10031] c12 N71-18603  
**GENERAL PRECISION, INC., LITTLE FALLS, N.J.**  
 Reversible current control apparatus Patent  
 [NASA-CASE-XLA-09371] c10 N71-18724  
**GENERAL PRECISION, INC., SUNNYVALE, CALIF.**  
 Broadband video process with very high input impedance  
 [NASA-CASE-NPO-10199] c09 N72-17156  
**GENERAL TECHNOLOGIES CORP., RESTON, VA.**  
 Improved method of making reinforced composite structures  
 [NASA-CASE-LEW-12619-1] c24 N76-16181  
**GEOPHYSICS CORP. OF AMERICA, BEDFORD, MASS.**  
 Inflation system for balloon type satellites Patent  
 [NASA-CASE-XGS-03351] c31 N71-16081  
**GEOPHYSICS CORP. OF AMERICA, BOSTON, MASS.**  
 Ionospheric battery Patent  
 [NASA-CASE-XGS-01593] c03 N70-35408  
**GEORGE WASHINGTON UNIV., WASHINGTON, D.C.**  
 Bacteria detection instrument and method  
 [NASA-CASE-GSC-11533-1] c14 N73-13435  
 Arterial pulse wave pressure transducer  
 [NASA-CASE-GSC-11531-1] c05 N74-27566  
**GIANNINI SCIENTIFIC CORP., SANTA ANA, CALIF.**  
 Electric arc light source having undercut recessed anode  
 [NASA-CASE-ARC-10266-1] c33 N75-29318  
 Combination automatic-starting electrical plasma torch and gas shutoff valve  
 [NASA-CASE-XLE-10717] c37 N75-29426  
**GLOBE-UNION, INC., MILWAUKEE, WIS.**  
 Method of coating solar cell with borosilicate glass and resultant product  
 [NASA-CASE-GSC-11514-1] c03 N72-24037  
**GOODYEAR AEROSPACE CORP., AKRON, OHIO.**  
 Foldable solar concentrator Patent  
 [NASA-CASE-XLA-04622] c03 N70-41580  
 Method of making a filament-wound container Patent  
 [NASA-CASE-XLE-03803-2] c15 N71-17651  
 Filament wound container Patent  
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Panelized high performance multilayer insulation Patent		
[NASA-CASE-MPS-14023]	c33 N71-25351	
Thermally activated foaming compositions Patent		
[NASA-CASE-LAR-10373-1]	c18 N71-26155	
Compression test assembly		
[NASA-CASE-LAR-10840-1]	c14 N73-32323	
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Metal containing polymers from cyclic tetrameric phenylphosphonitrilamides Patent		
[NASA-CASE-HQN-10364]	c06 N71-27363	
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Out of tolerance warning alarm system for plurality of monitored circuits Patent		
[NASA-CASE-XMS-10984-1]	c10 N71-19417	
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Waveform simulator Patent		
[NASA-CASE-NPO-10251]	c10 N71-27365	
GULTON INDUSTRIES, INC., ALBUQUERQUE, N.MEX.		
Analog-to-digital converter		
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HAMILTON STANDARD DIV., UNITED AIRCRAFT CORP., WINDSOR LOCKS, CONN.		
Condensate removal device for heat exchanger		
[NASA-CASE-MSC-14143-1]	c77 N75-20139	
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Venting device for pressurized space suit helmet Patent		
[NASA-CASE-XMS-09652-1]	c05 N71-26333	
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Method and system for in vivo measurement of bone tissue		
[NASA-CASE-MSC-14276-1]	c54 N75-21948	
HAYES INTERNATIONAL CORP., BIRMINGHAM, ALA.		
Space craft soft landing system Patent		
[NASA-CASE-XMP-02108]	c31 N70-36845	
Device for preventing high voltage arcing in electron beam welding Patent		
[NASA-CASE-XMP-08522]	c15 N71-19486	
HAYES INTERNATIONAL CORP., HUNTSVILLE, ALA.		
Method and apparatus for cryogenic wire stripping Patent		
[NASA-CASE-MPS-10340]	c15 N71-17628	
Self-balancing strain gage transducer Patent		
[NASA-CASE-MPS-12827]	c14 N71-17656	
Automatic closed circuit television arc guidance control Patent		
[NASA-CASE-MPS-13046]	c07 N71-19433	
HAZLETON LABS., FALLS CHURCH, VA.		
Use of the enzyme hexokinase for the reduction of inherent light levels		
[NASA-CASE-XGS-05533]	c04 N69-27487	
Light detection instrument Patent		
[NASA-CASE-XGS-05534]	c23 N71-16355	
Lyophilized reaction mixtures Patent		
[NASA-CASE-XGS-05532]	c06 N71-17705	
Firefly pump-metering system		
[NASA-CASE-GSC-10218-1]	c15 N72-21465	
HERCULES, INC., WILMINGTON, DEL.		
Method of repairing discontinuity in fiberglass structures		
[NASA-CASE-LAR-10416-1]	c18 N74-30001	
HOPFMAN ELECTRONICS CORP., EL MONTE, CALIF.		
Method for producing a solar cell having an integral protective covering		
[NASA-CASE-XGS-04531]	c03 N69-24267	
HONEYWELL, INC., HOPKINS, MINN.		
Frequency control network for a current feedback oscillator Patent		
[NASA-CASE-GSC-10041-1]	c10 N71-19418	
HONEYWELL, INC., MINNEAPOLIS, MINN.		
Bus voltage compensation circuit for controlling direct current motor		
[NASA-CASE-XMS-04215-1]	c09 N69-39987	
Apparatus for overcurrent protection of a push-pull amplifier Patent		
[NASA-CASE-MSC-12033-1]	c09 N71-13531	
Static inverter Patent		
[NASA-CASE-XGS-05289]	c09 N71-19470	
High impedance measuring apparatus Patent		
[NASA-CASE-XMS-08589-1]	c09 N71-20569	
Clamping assembly for inertial components Patent		
[NASA-CASE-XMS-02184]	c15 N71-20813	
Piezoelectric pump Patent		
[NASA-CASE-XNP-05429]	c26 N71-21824	
Controllers Patent		
[NASA-CASE-XMS-07487]	c15 N71-23255	
Convoluting device for forming convolutions and the like Patent		
[NASA-CASE-XNP-05297]	c15 N71-23811	
Failure sensing and protection circuit for converter networks Patent		
[NASA-CASE-GSC-10114-1]	c10 N71-27366	
Voice operated controller Patent		
[NASA-CASE-XLA-04063]	c31 N71-33160	
Load current sensor for a series pulse width modulated power supply		
[NASA-CASE-GSC-10656-1]	c09 N72-25249	
Radiant source tracker independent of nonconstant irradiance		
[NASA-CASE-NPO-11686]	c14 N73-25462	
Optical instruments		
[NASA-CASE-MSC-14096-1]	c14 N74-15095	
Manufacture of glass-to-metal seals wherein the cleanliness of the process is enhanced and the leak resistance of the resulting seal is maximized		
[NASA-CASE-LAR-11563-1]	c37 N76-21558	
HOUSTON UNIV., TEX.		
Analysis of volatile organic compounds		
[NASA-CASE-MSC-14428-1]	c06 N74-19776	
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Varactor high level mixer		
[NASA-CASE-XGS-02171]	c09 N69-24324	
Thermally operated valve Patent		
[NASA-CASE-XLE-00815]	c15 N70-35407	
Thrust dynamometer Patent		
[NASA-CASE-XLE-00702]	c14 N70-40203	
Solid state chemical source for ammonia beam maser Patent		
[NASA-CASE-XGS-01504]	c16 N70-41578	
Canopus detector including automotive gain control of photomultiplier tube Patent		
[NASA-CASE-XNP-03914]	c21 N71-10771	
Horn feed having overlapping apertures Patent		
[NASA-CASE-GSC-10452]	c07 N71-12396	
Deflective rod switch with elastic support and sealing means Patent		
[NASA-CASE-XNP-09808]	c09 N71-12518	
Guidance and maneuver analyzer Patent		
[NASA-CASE-XNP-09572]	c14 N71-15621	
Method of making screen by casting Patent		
[NASA-CASE-XLE-00953]	c15 N71-15966	
Fluid flow control valve Patent		
[NASA-CASE-XLE-00703]	c15 N71-15967	
Low noise single aperture multimode monopulse antenna feed system Patent		
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Multilayer porous ionizer Patent		
[NASA-CASE-XNP-04338]	c17 N71-23046	
Construction and method of arranging a plurality of ion engines to form a cluster Patent		
[NASA-CASE-XNP-02923]	c28 N71-23081	
Method for fiberizing ceramic materials Patent		
[NASA-CASE-XNP-00597]	c18 N71-23088	
Inorganic thermal control pigment Patent		
[NASA-CASE-XNP-02139]	c18 N71-24184	
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[NASA-CASE-XGS-02290]	c07 N71-28809	
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High efficiency ionizer assembly Patent		
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Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent		
[NASA-CASE-HQN-00936]	c31 N71-29050	
Fabrication of controlled-porosity metals Patent		
[NASA-CASE-XNP-04339]	c17 N71-29137	
Ion thruster		
[NASA-CASE-LEW-10770-1]	c28 N72-22770	
Refractory porcelain enamel passive control coating for high temperature alloys		
[NASA-CASE-MPS-22324-1]	c27 N75-27160	
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[NASA-CASE-XNP-02713]	c10 N69-39888	
Thermal switch Patent		
[NASA-CASE-XNP-00463]	c33 N70-36847	
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[NASA-CASE-XNP-02839]	c28 N70-41922	

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[NASA-CASE-XNP-08274] c10 N71-13537  
Gas regulator Patent  
[NASA-CASE-NPO-10298] c12 N71-17661  
A dc-coupled noninverting one-shot Patent  
[NASA-CASE-XNP-09450] c10 N71-18723  
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[NASA-CASE-XNP-02592] c24 N71-20518  
Broadband frequency discriminator Patent  
[NASA-CASE-NPO-10096] c07 N71-24583  
Flexible, repairable, portable material for electrical connectors Patent  
[NASA-CASE-XGS-05180] c18 N71-25881  
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[NASA-CASE-NPO-10302] c10 N71-26142  
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Solar panel fabrication Patent  
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Method for removing oxygen impurities from cesium Patent  
[NASA-CASE-XNP-04262-2] c17 N71-26773  
Virtual wall slot circularly polarized planar array antenna  
[NASA-CASE-NPO-10301] c07 N72-11148  
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[NASA-CASE-NPO-10303] c07 N72-22127  
Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c15 N73-27406  
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[NASA-CASE-GSC-11909] c09 N74-20863  
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[NASA-CASE-MPS-22411-1] c15 N74-21058  
Method and apparatus for optically monitoring the angular position of a rotating mirror  
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[NASA-CASE-XNP-02039] c15 N71-15871  
Lightweight refractory insulation and method of preparing the same Patent  
[NASA-CASE-XNP-05279] c18 N71-16124  
Stabilized zinc oxide coating compositions Patent  
[NASA-CASE-XNP-07770-2] c18 N71-26772  
Synthesis of zinc titanate pigment and coatings containing the same  
[NASA-CASE-MPS-13532] c18 N72-17532  
Junction range finder  
[NASA-CASE-KSC-10108] c14 N73-25461

## IMAGE INFORMATION, INC., DANBURY, CONN.

Recorder/processor apparatus  
[NASA-CASE-GSC-11553-1] c07 N74-15831

## INCA ENGINEERING CORP., SAN GABRIEL, CALIF.

Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-MPS-21424-1] c12 N74-27730

## INSTITUTE FOR RESEARCH, INC., HOUSTON, TEX.

Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c05 N72-25120

## INSTITUTE OF RESEARCH AND INSTRUMENTATION, HOUSTON, TEX.

Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c05 N71-12346

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Electrical connector pin with wiping action  
[NASA-CASE-XNP-04238] c09 N69-39734  
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[NASA-CASE-XNP-02107] c15 N71-10809  
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[NASA-CASE-GSC-10564] c10 N71-29135  
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[NASA-CASE-XLE-10910] c18 N71-29040  
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ITT CORP., NUTLEY, N.J.  
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[NASA-CASE-XGS-08679] c10 N71-21473  
Satellite interlace synchronization system  
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Pressure variable capacitor  
[NASA-CASE-XNP-09752] c14 N69-21541  
Rock drill for recovering samples  
[NASA-CASE-XNP-07478] c14 N69-21923  
Data compression system  
[NASA-CASE-XNP-09785] c08 N69-21928  
Magnetohydrodynamic induction machine  
[NASA-CASE-XNP-07481] c25 N69-21929  
Electromechanical actuator  
[NASA-CASE-XNP-05975] c15 N69-23185  
Refrigeration apparatus  
[NASA-CASE-NPO-10309] c15 N69-23190  
Direct radiation cooling of the collector of linear beam tubes  
[NASA-CASE-XNP-09227] c15 N69-24319  
Excitation and detection circuitry for a flux responsive magnetic head  
[NASA-CASE-XNP-04183] c09 N69-24329  
Telemetry word forming unit  
[NASA-CASE-XNP-09225] c09 N69-24333  
Solid state switch  
[NASA-CASE-XNP-09228] c09 N69-27500  
Belleville spring assembly with elastic guides  
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[NASA-CASE-XNP-04180] c07 N69-39736  
Coating process  
[NASA-CASE-XNP-06508] c18 N69-39895  
Bimetallic power controlled actuator  
[NASA-CASE-XNP-09776] c09 N69-39929  
Piping arrangement through a double chamber structure  
[NASA-CASE-XNP-08882] c15 N69-39935  
Micropacked column for a chromatographic system  
[NASA-CASE-XNP-04816] c06 N69-39936  
Temperature sensitive capacitor device  
[NASA-CASE-XNP-09750] c14 N69-39937  
Theraionic tantalum emitter doped with oxygen  
Patent Application  
[NASA-CASE-NPO-11138] c03 N70-34646  
Data handling system based on source significance, storage availability and data received from the source Patent Application  
[NASA-CASE-XNP-04162-1] c08 N70-34675  
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Liquid junction and method of fabricating the same Patent Application  
[NASA-CASE-NPO-10682] c15 N70-34699  
Helium refining by superfluidity Patent  
[NASA-CASE-XNP-00733] c06 N70-34946  
Means and methods of depositing thin films on substrates Patent  
[NASA-CASE-XNP-00595] c15 N70-34967  
Photosensitive device to detect bearing deviation Patent  
[NASA-CASE-XNP-00438] c21 N70-35089

Antenna beam-shaping apparatus Patent		[NASA-CASE-XNP-01749]	c27 N70-41897
[NASA-CASE-XNP-00611]	c09 N70-35219	Solenoid construction Patent	
Temperature-compensating means for cavity resonator of amplifier Patent		[NASA-CASE-XNP-01951]	c09 N70-41929
[NASA-CASE-XNP-00449]	c14 N70-35220	Closed loop ranging system Patent	
Parabolic reflector horn feed with spillover correction Patent		[NASA-CASE-XNP-01501]	c21 N70-41930
[NASA-CASE-XNP-00540]	c09 N70-35382	Printed circuit board with bellows rivet connection Patent	
Means for visually indicating flight paths of vehicles between the Earth, Venus, and Mercury Patent		[NASA-CASE-XNP-05082]	c15 N70-41960
[NASA-CASE-XNP-00708]	c14 N70-35394	Phase-shift data transmission system having a pseudo-noise SYNC code modulated with the data in a single channel Patent	
Space vehicle attitude control Patent		[NASA-CASE-XNP-00911]	c08 N70-41961
[NASA-CASE-XNP-00465]	c21 N70-35395	Baseline stabilization system for ionization detector Patent	
Binary to binary-coded-decimal converter Patent		[NASA-CASE-XNP-03128]	c10 N70-41991
[NASA-CASE-XNP-00432]	c08 N70-35423	Single or joint amplitude distribution analyzer Patent	
Cassegrainian antenna subreflector flange for suppressing ground noise Patent		[NASA-CASE-XNP-01383]	c09 N71-10659
[NASA-CASE-XNP-00683]	c09 N70-35425	Dual waveguide mode source having control means for adjusting the relative amplitude of two modes Patent	
Ionization vacuum gauge Patent		[NASA-CASE-XNP-03134]	c07 N71-10676
[NASA-CASE-XNP-00646]	c14 N70-35666	Method for determining the state of charge of batteries by the use of tracers Patent	
Two-fluid magnetohydrodynamic system and method for thermal-electric power conversion Patent		[NASA-CASE-XNP-01464]	c03 N71-10728
[NASA-CASE-XNP-00644]	c03 N70-36803	High pressure regulator valve Patent	
Mechanical coordinate converter Patent		[NASA-CASE-XNP-00710]	c15 N71-10778
[NASA-CASE-XNP-00614]	c14 N70-36907	Solar battery with interconnecting means for plural cells Patent	
High pressure four-way valve Patent		[NASA-CASE-XNP-06506]	c03 N71-11050
[NASA-CASE-XNP-00214]	c15 N70-36908	Sealed battery gas manifold construction Patent	
Liquid rocket system Patent		[NASA-CASE-XNP-03378]	c03 N71-11051
[NASA-CASE-XNP-00610]	c28 N70-36910	Solar cell submodule Patent	
Radar ranging receiver Patent		[NASA-CASE-XNP-05821]	c03 N71-11056
[NASA-CASE-XNP-00748]	c07 N70-36911	Reflectometer for receiver input impedance match measurement Patent	
Attitude control for spacecraft Patent		[NASA-CASE-XNP-10843]	c07 N71-11267
[NASA-CASE-XNP-00294]	c21 N70-36938	Means for generating a sync signal in an FM communication system Patent	
Elastic universal joint Patent		[NASA-CASE-XNP-10830]	c07 N71-11281
[NASA-CASE-XNP-00416]	c15 N70-36947	Multi-feed cone Cassegrain antenna Patent	
Apparatus and method for control of a solid fueled rocket vehicle Patent		[NASA-CASE-XNP-10539]	c07 N71-11285
[NASA-CASE-XNP-00217]	c28 N70-38181	Thermionic diode switch Patent	
Expulsion bladder-equipped storage tank structure Patent		[NASA-CASE-XNP-10404]	c03 N71-12255
[NASA-CASE-XNP-00612]	c11 N70-38182	Anti-backlash circuit for hydraulic drive system Patent	
High-voltage cable Patent		[NASA-CASE-XNP-01020]	c03 N71-12260
[NASA-CASE-XNP-00738]	c09 N70-38201	Binary number sorter Patent	
Umbilical separator for rockets Patent		[NASA-CASE-XNP-10112]	c08 N71-12502
[NASA-CASE-XNP-00425]	c11 N70-38202	Linear three-tap feedback shift register Patent	
Multiple Belleville spring assembly Patent		[NASA-CASE-XNP-10351]	c08 N71-12503
[NASA-CASE-XNP-00840]	c15 N70-38225	Binary sequence detector Patent	
Ignition system for monopropellant combustion devices Patent		[NASA-CASE-XNP-05415]	c08 N71-12505
[NASA-CASE-XNP-00249]	c28 N70-38249	Data compression system with a minimum time delay unit Patent	
Pressure regulating system Patent		[NASA-CASE-XNP-08832]	c08 N71-12506
[NASA-CASE-XNP-00450]	c15 N70-38603	Magnetic counter Patent	
Slit regulated gas journal bearing Patent		[NASA-CASE-XNP-08836]	c09 N71-12515
[NASA-CASE-XNP-00476]	c15 N70-38620	Operational integrator Patent	
Steerable solid propellant rocket motor Patent		[NASA-CASE-XNP-10230]	c09 N71-12520
[NASA-CASE-XNP-00234]	c28 N70-38645	Starting circuit for vapor lamps and the like Patent	
Space simulator Patent		[NASA-CASE-XNP-01058]	c09 N71-12540
[NASA-CASE-XNP-00459]	c11 N70-38675	Matched thermistors for microwave power meters Patent	
Ejection unit Patent		[NASA-CASE-XNP-10348]	c10 N71-12554
[NASA-CASE-XNP-00676]	c15 N70-38996	Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent	
Time-division multiplexer Patent		[NASA-CASE-XNP-00384]	c09 N71-13530
[NASA-CASE-XNP-00431]	c09 N70-38998	Automatic thermal switch Patent	
Trajectory-correction propulsion system Patent		[NASA-CASE-XNP-03796]	c23 N71-15467
[NASA-CASE-XNP-01104]	c28 N70-39931	Photoelectric energy spectrometer Patent	
Electrically-operated rotary shutter Patent		[NASA-CASE-XNP-04161]	c14 N71-15599
[NASA-CASE-XNP-00637]	c14 N70-40273	Anti-glare improvement for optical imaging systems Patent	
Zero gravity starting means for liquid propellant motors Patent		[NASA-CASE-XNP-10337]	c14 N71-15604
[NASA-CASE-XNP-01390]	c28 N70-41275	Fluid flow restrictor Patent	
Parallel motion suspension device Patent		[NASA-CASE-XNP-10117]	c15 N71-15608
[NASA-CASE-XNP-01567]	c15 N70-41310	High temperature lens construction Patent	
Ignition means for monopropellant Patent		[NASA-CASE-XNP-04111]	c14 N71-15622
[NASA-CASE-XNP-00876]	c28 N70-41311	Solder flux which leaves corrosion-resistant coating Patent	
Reinforcing means for diaphragms Patent		[NASA-CASE-XNP-03459-2]	c18 N71-15688
[NASA-CASE-XNP-01962]	c32 N70-41370	Intermittent type silica gel adsorption refrigerator Patent	
High pressure filter Patent		[NASA-CASE-XNP-00920]	c15 N71-15906
[NASA-CASE-XNP-00732]	c28 N70-41447	Dual mode horn antenna Patent	
Phase-locked loop with sideband rejecting properties Patent		[NASA-CASE-XNP-01057]	c07 N71-15907
[NASA-CASE-XNP-02723]	c07 N70-41680		
Digital television camera control system Patent			
[NASA-CASE-XNP-01472]	c14 N70-41807		
Antiflutter ball check valve Patent			
[NASA-CASE-XNP-01152]	c15 N70-41811		
Roll attitude star sensor system Patent			
[NASA-CASE-XNP-01307]	c21 N70-41856		
Process for preparing sterile solid propellants Patent			

Means for controlling rupture of shock tube diaphragm Patent  
[NASA-CASE-XAC-00731] c11 N71-15960

Insertion loss measuring apparatus having transformer means connected across a pair of bolometers Patent  
[NASA-CASE-XNP-01193] c10 N71-16057

Polarimeter for transient measurement Patent  
[NASA-CASE-XNP-08883] c23 N71-16101

Flexible composite membrane Patent  
[NASA-CASE-XNP-08837] c18 N71-16210

Mount for thermal control system Patent  
[NASA-CASE-NPO-10138] c33 N71-16357

Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c23 N71-16365

Parallel plate viscometer Patent  
[NASA-CASE-XNP-09462] c14 N71-17584

Means and method of measuring viscoelastic strain Patent  
[NASA-CASE-XNP-01153] c32 N71-17645

Interferometer direction sensor Patent  
[NASA-CASE-NPO-10320] c14 N71-17655

Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c14 N71-17662

Electrical spot terminal assembly Patent  
[NASA-CASE-NPO-10034] c15 N71-17685

Sealed separable connection Patent  
[NASA-CASE-NPO-10064] c15 N71-17693

Incremental motion drive system Patent  
[NASA-CASE-XNP-08897] c15 N71-17694

Microbalance including crystal oscillators for measuring contaminants in a gas system Patent  
[NASA-CASE-NPO-10144] c14 N71-17701

Apparatus and method for protecting a photographic device Patent  
[NASA-CASE-NPO-10174] c14 N71-18465

Ranging system Patent  
[NASA-CASE-NPO-10066] c09 N71-18598

High impact pressure regulator Patent  
[NASA-CASE-NPO-10175] c14 N71-18625

Magnetic core current steering commutator Patent  
[NASA-CASE-NPO-10201] c08 N71-18694

Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
[NASA-CASE-NPO-10373] c03 N71-18698

A dc-coupled noninverting one-shot Patent  
[NASA-CASE-XNP-09450] c10 N71-18723

Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c09 N71-18843

Data Compression processor Patent  
[NASA-CASE-NPO-10068] c08 N71-19288

Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c08 N71-19420

High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c09 N71-19516

Solar cell matrix Patent  
[NASA-CASE-NPO-10821] c03 N71-19545

Electrical switching device Patent  
[NASA-CASE-NPO-10037] c09 N71-19610

Drift compensation circuit for analog to digital converter Patent  
[NASA-CASE-XNP-04780] c08 N71-19687

Roll-up solar array Patent  
[NASA-CASE-NPO-10188] c03 N71-20273

Method and device for determining battery state of charge Patent  
[NASA-CASE-NPO-10194] c03 N71-20407

Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c15 N71-20440

Transmission line thermal short Patent  
[NASA-CASE-XNP-09775] c09 N71-20445

Synchronous servo loop control system Patent  
[NASA-CASE-XNP-03744] c10 N71-20448

Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c14 N71-20461

Signal-to-noise ratio estimating by taking ratio of mean and standard deviation of integrated signal samples Patent  
[NASA-CASE-XNP-05254] c07 N71-20791

Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c07 N71-20814

High power-high voltage waterload Patent  
[NASA-CASE-XNP-05381] c09 N71-20842

Coaxial cable connector Patent  
[NASA-CASE-XNP-04732] c09 N71-20851

Soldering with solder flux which leaves corrosion resistant coating Patent  
[NASA-CASE-XNP-03459] c15 N71-21078

Miniature stress transducer Patent  
[NASA-CASE-XNP-02983] c14 N71-21091

Holder for crystal resonators Patent  
[NASA-CASE-XNP-03637] c15 N71-21311

Correlation function apparatus Patent  
[NASA-CASE-XNP-00746] c07 N71-21476

Split nut separation system Patent  
[NASA-CASE-XNP-06914] c15 N71-21489

Light position locating system Patent  
[NASA-CASE-XNP-01059] c23 N71-21821

Electron bombardment ion engine Patent  
[NASA-CASE-XNP-04124] c28 N71-21822

Data compressor Patent  
[NASA-CASE-XNP-04067] c08 N71-22707

Error correcting method and apparatus Patent  
[NASA-CASE-XNP-02748] c08 N71-22749

Counter and shift register Patent  
[NASA-CASE-XNP-01753] c08 N71-22897

Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c14 N71-22995

Hybrid lubrication system and bearing Patent  
[NASA-CASE-XNP-01641] c15 N71-22997

Filler valve Patent  
[NASA-CASE-XNP-01747] c15 N71-23024

Refrigeration apparatus Patent  
[NASA-CASE-XNP-08877] c15 N71-23025

Reduced bandwidth video communication system utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c07 N71-23026

Model launcher for wind tunnels Patent  
[NASA-CASE-XNP-03578] c11 N71-23030

Drive circuit utilizing two cores Patent  
[NASA-CASE-XNP-01318] c10 N71-23033

Solar vane actuator Patent  
[NASA-CASE-XNP-05535] c14 N71-23040

Time of flight mass spectrometer with feedback means from the detector to the low source and a specific counter Patent  
[NASA-CASE-XNP-01056] c14 N71-23041

Connector internal force gauge Patent  
[NASA-CASE-XNP-03918] c14 N71-23087

Circulator having quarter wavelength resonant post and parametric amplifier circuits utilizing the same Patent  
[NASA-CASE-XNP-02140] c09 N71-23097

Method of resolving clock synchronization error and means therefor Patent  
[NASA-CASE-XNP-08875] c10 N71-23099

Impact testing machine Patent  
[NASA-CASE-XNP-04817] c14 N71-23225

Zeta potential flowmeter Patent  
[NASA-CASE-XNP-06509] c14 N71-23226

Comparator for the comparison of two binary numbers Patent  
[NASA-CASE-XNP-04819] c08 N71-23295

Decontamination of petroleum products Patent  
[NASA-CASE-XNP-03835] c06 N71-23499

Dicyanoacetylene polymers Patent  
[NASA-CASE-XNP-03250] c06 N71-23500

Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c09 N71-23548

Millimeter wave radiometer for radio astronomy Patent  
[NASA-CASE-XNP-09832] c30 N71-23723

Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c14 N71-23797

High speed phase detector Patent  
[NASA-CASE-XNP-01306-2] c09 N71-24596

Apparatus for testing polymeric materials Patent  
[NASA-CASE-XNP-09699] c06 N71-24607

Digital synchronizer Patent  
[NASA-CASE-NPO-10851] c07 N71-24613

Signal processing apparatus for multiplex transmission Patent  
[NASA-CASE-NPO-10388] c07 N71-24622

Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c08 N71-24633

Serial digital decoder Patent  
[NASA-CASE-NPO-10150] c08 N71-24650

Detenting servomotor Patent  
[NASA-CASE-XNP-06936] c15 N71-24695

Reversible motion drive system Patent  
[NASA-CASE-NPO-10173] c15 N71-24696



Decoder system Patent			Automated fluid chemical analyzer Patent	
[NASA-CASE-NPO-10118]	c07 N71-24741		[NASA-CASE-NXP-09451]	c06 N71-26754
Television signal processing system Patent			Material handling device Patent	
[NASA-CASE-NPO-10140]	c07 N71-24742		[NASA-CASE-NXP-09770-3]	c11 N71-27036
Switching circuit Patent			Pressure seal Patent	
[NASA-CASE-NXP-06505]	c10 N71-24799		[NASA-CASE-NPO-10796]	c15 N71-27068
Magnetic power switch Patent			Multiducted electromagnetic pump Patent	
[NASA-CASE-NPO-10242]	c09 N71-24803		[NASA-CASE-NPO-10755]	c15 N71-27084
Remodulator filter Patent			Peak acceleration limiter for vibrational tester Patent	
[NASA-CASE-NPO-10198]	c09 N71-24806		[NASA-CASE-NPO-10556]	c14 N71-27185
Broadband microwave waveguide window Patent			Thin film capacitive bolometer and temperature sensor Patent	
[NASA-CASE-NXP-08880]	c09 N71-24808		[NASA-CASE-NPO-10607]	c09 N71-27232
Cavity radiometer Patent			Black body cavity radiometer Patent	
[NASA-CASE-NXP-08961]	c14 N71-24809		[NASA-CASE-NPO-10810]	c14 N71-27323
High-gain, broadband traveling wave maser Patent			Video signal enhancement system with dynamic range compression and modulation index expansion Patent	
[NASA-CASE-NPO-10548]	c16 N71-24831		[NASA-CASE-NPO-10343]	c07 N71-27341
Fluid containers and resealable septum therefor Patent			Force-balanced, throttle valve Patent	
[NASA-CASE-NPO-10123]	c15 N71-24835		[NASA-CASE-NPO-10808]	c15 N71-27432
Temperature telemetric transmitter Patent			Cavity emitter for thermionic converter Patent	
[NASA-CASE-NPO-10649]	c07 N71-24840		[NASA-CASE-NPO-10412]	c09 N71-28421
Tuning arrangement for an electron discharge device or the like Patent			Frictionless universal joint Patent	
[NASA-CASE-NXP-09771]	c09 N71-24841		[NASA-CASE-NPO-10646]	c15 N71-28467
Noise limiter Patent			Epoxy-aziridine polymer product Patent	
[NASA-CASE-NPO-10169]	c10 N71-24844		[NASA-CASE-NPO-10701]	c06 N71-28620
Noninterruptable digital counting system Patent			Fluid impervious barrier including liquid metal alloy and method of making same Patent	
[NASA-CASE-NXP-09759]	c08 N71-24891		[NASA-CASE-NXP-08881]	c17 N71-28747
Drive circuit for minimizing power consumption in inductive load Patent			Wind tunnel microphone structure Patent	
[NASA-CASE-NPO-10716]	c09 N71-24892		[NASA-CASE-NXP-00250]	c11 N71-28779
Space simulator Patent			Trialkyl-dihalotantalum and niobium compounds Patent	
[NASA-CASE-NPO-10141]	c11 N71-24964		[NASA-CASE-NXP-04023]	c06 N71-28808
Process for reducing secondary electron emission Patent			Digital memory sense amplifying means Patent	
[NASA-CASE-NXP-09469]	c24 N71-25555		[NASA-CASE-NXP-01012]	c08 N71-28925
Minimal logic block encoder Patent			Digital filter for reducing sampling jitter in digital control systems Patent	
[NASA-CASE-NPO-10595]	c10 N71-25917		[NASA-CASE-NPO-11088]	c08 N71-29034
Novel polycarboxylic prepolymeric materials and polymers thereof Patent			Method and apparatus for aligning a laser beam projector Patent	
[NASA-CASE-NPO-10596]	c06 N71-25929		[NASA-CASE-NPO-11087]	c23 N71-29125
Current steering switch Patent			Rubber composition for use with hydrazine Patent	
[NASA-CASE-NXP-08567]	c09 N71-26000		Application	
Dual polarity full wave dc motor drive Patent			[NASA-CASE-NPO-11433]	c18 N71-31140
[NASA-CASE-NXP-07477]	c09 N71-26092		Rotable accurate reflector system for telescopes Patent	
High impact antenna Patent			[NASA-CASE-NPO-10468]	c23 N71-33229
[NASA-CASE-NPO-10231]	c07 N71-26101		Encoder/decoder system for a rapidly synchronizable binary code Patent	
Video communication system and apparatus Patent			[NASA-CASE-NPO-10342]	c10 N71-33407
[NASA-CASE-NXP-06611]	c07 N71-26102		High power microwave power divider Patent	
Parallel generation of the check bits of a PN sequence Patent			[NASA-CASE-NPO-11031]	c07 N71-33606
[NASA-CASE-NXP-04623]	c10 N71-26103		A dc servosystem including an ac motor Patent	
Phase multiplying electronic scanning system Patent			[NASA-CASE-NPO-10700]	c07 N71-33613
[NASA-CASE-NPO-10302]	c10 N71-26142		Solar cell matrix	
Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent			[NASA-CASE-NPO-11190]	c03 N71-34044
[NASA-CASE-NPO-10625]	c09 N71-26182		Manually actuated heat pump	
Fluid phase analyzer Patent			[NASA-CASE-NPO-10677]	c05 N72-11084
[NASA-CASE-NPO-10691]	c14 N71-26199		Virtual wall slot circularly polarized planar array antenna	
Variable frequency nuclear magnetic resonance spectrometer Patent			[NASA-CASE-NPO-10301]	c07 N72-11148
[NASA-CASE-NXP-09830]	c14 N71-26266		System for controlling the operation of a variable signal device	
Time synchronization system utilizing moon reflected coded signals Patent			[NASA-CASE-NPO-11064]	c07 N72-11150
[NASA-CASE-NPO-10143]	c10 N71-26326		Method and apparatus for data compression by a decreasing slope threshold test	
Broadband stable power multiplier Patent			[NASA-CASE-NPO-10769]	c08 N72-11171
[NASA-CASE-NXP-10854]	c10 N71-26331		Apparatus for remote measurement of displacement of marks on a specimen undergoing a tensile test	
Cascaded complementary pair broadband transistor amplifiers Patent			[NASA-CASE-NPO-10778]	c14 N72-11364
[NASA-CASE-NPO-10003]	c10 N71-26415		Vibration isolation system using compression springs	
Digital memory in which the driving of each word location is controlled by a switch core Patent			[NASA-CASE-NPO-11012]	c15 N72-11391
[NASA-CASE-NXP-01466]	c10 N71-26434		Feed system for an ion thruster	
Conically shaped cavity radiometer with a dual purpose cone winding Patent			[NASA-CASE-NPO-10737]	c28 N72-11709
[NASA-CASE-NXP-09701]	c14 N71-26475		Thermostatic actuator	
Analog signal integration and reconstruction system Patent			[NASA-CASE-NPO-10637]	c15 N72-12409
[NASA-CASE-NPO-10344]	c10 N71-26544		High voltage transistor amplifier with constant current load	
Rapid sync acquisition system Patent			[NASA-CASE-NPO-11023]	c09 N72-17155
[NASA-CASE-NPO-10214]	c10 N71-26577		Reference voltage switching unit	
Cryogenic cooling system Patent			[NASA-CASE-NPO-11253]	c09 N72-17157
[NASA-CASE-NPO-10467]	c23 N71-26654		Valving device for automatic refilling in cryogenic liquid systems	
Vacuum evaporator with electromagnetic ion steering Patent			[NASA-CASE-NPO-11177]	c15 N72-17453
[NASA-CASE-NPO-10331]	c09 N71-26701			

Expansible support means [NASA-CASE-NPO-11059]	c15 N72-17454	[NASA-CASE-NPO-11264]	c07 N72-25174
Breakaway connector [NASA-CASE-NPO-11140]	c15 N72-17455	Communications link for computers [NASA-CASE-NPO-11161]	c08 N72-25207
Modular encoder [NASA-CASE-NPO-10629]	c08 N72-18184	Method and apparatus for frequency-division multiplex communications by digital phase shift of carrier [NASA-CASE-NPO-11338]	c08 N72-25208
Transition tracking bit synchronization system [NASA-CASE-NPO-10844]	c07 N72-20140	Binary coded sequential acquisition ranging system [NASA-CASE-NPO-11194]	c08 N72-25209
Data compression system [NASA-CASE-NPO-11243]	c07 N72-20154	MOD 2 sequential function generator for multibit binary sequence [NASA-CASE-NPO-10636]	c08 N72-25210
Digital quasi-exponential function generator [NASA-CASE-NPO-11130]	c08 N72-20176	Digital video display system using cathode ray tube [NASA-CASE-NPO-11342]	c09 N72-25248
Method and apparatus for high resolution spectral analysis [NASA-CASE-NPO-10748]	c08 N72-20177	Inverter oscillator with voltage feedback [NASA-CASE-NPO-10760]	c09 N72-25254
Flow rate switch [NASA-CASE-NPO-10722]	c09 N72-20199	Thermal motor [NASA-CASE-NPO-11283]	c09 N72-25260
Electrical connector [NASA-CASE-NPO-10694]	c09 N72-20200	Two phase flow system with discrete impinging two-phase jets [NASA-CASE-NPO-11556]	c12 N72-25292
Wide band doubler and sine wave quadrature generator [NASA-CASE-NPO-11133]	c10 N72-20223	Atmospheric sampling devices [NASA-CASE-NPO-11373]	c13 N72-25323
Signal phase estimator [NASA-CASE-NPO-11203]	c10 N72-20224	Light sensor [NASA-CASE-NPO-11311]	c14 N72-25414
Optimal control system for an electric motor driven vehicle [NASA-CASE-NPO-11210]	c11 N72-20244	Quick disconnect coupling [NASA-CASE-NPO-11202]	c15 N72-25450
Impact energy absorbing system utilizing fracturable material [NASA-CASE-NPO-10671]	c15 N72-20443	Coaxial injector for reaction motors [NASA-CASE-NPO-11095]	c15 N72-25455
Torsional disconnect unit [NASA-CASE-NPO-10704]	c15 N72-20445	Ball screw linear actuator [NASA-CASE-NPO-11222]	c15 N72-25456
Solid propellant rocket motor [NASA-CASE-NXP-03282]	c28 N72-20758	Helium refrigerator and method for decontaminating the refrigerator [NASA-CASE-NPO-10634]	c23 N72-25619
Shell side liquid metal boiler [NASA-CASE-NPO-10831]	c33 N72-20915	Uninsulated in-core thermionic diode [NASA-CASE-NPO-10542]	c09 N72-27228
Method and apparatus for mapping planets [NASA-CASE-NPO-11001]	c07 N72-21118	Audio frequency marker system [NASA-CASE-NPO-11147]	c14 N72-27408
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[NASA-CASE-NPO-11481]	c21 N73-13644	
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[NASA-CASE-NPO-11661]	c07 N73-14130	
Cyclically operable optical shutter		
[NASA-CASE-NPO-10758]	c14 N73-14427	
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Data-aided carrier tracking loops		
[NASA-CASE-NPO-11282]	c10 N73-16205	
Stacked solar cell arrays		
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An n-ary linear feedback shift register with binary logic		
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[NASA-CASE-NPO-11213]	c15 N73-20514	
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Collapsible structure for an antenna reflector		
[NASA-CASE-NPO-11751]	c07 N73-24176	
Pump for delivering heated fluids		
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Ion thruster with a combination keeper electrode and electron baffle		
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[NASA-CASE-NPO-11559]	c28 N73-24784	
Code regenerative clean-up loop transponder for a mu-type ranging system		
[NASA-CASE-NPO-11707]	c07 N73-25161	
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[NASA-CASE-NPO-11497]	c08 N73-25206	
Radiant source tracker independent of nonconstant irradiance		
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High pulse rate high resolution optical radar system		
[NASA-CASE-NPO-11426]	c07 N73-26119	
Counting digital filters		
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[NASA-CASE-NPO-11456]	c08 N73-26176	
Low phase noise digital frequency divider		
[NASA-CASE-NPO-11569]	c10 N73-26229	
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[NASA-CASE-NPO-11366]	c11 N73-26238	
Temperature control system with a pulse width modulated bridge		
[NASA-CASE-NPO-11304]	c14 N73-26430	
Disconnect unit		
[NASA-CASE-NPO-11330]	c33 N73-26958	
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[NASA-CASE-NPO-11941-1]	c10 N73-27171	
Receiver with an improved phase lock loop in a multichannel telemetry system with suppressed carrier		
[NASA-CASE-NPO-11593-1]	c07 N73-28012	
Analog-to-digital converter		
[NASA-CASE-NXP-00477]	c08 N73-28045	
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[NASA-CASE-NXP-03623]	c09 N73-28084	
Apparatus and method for measuring the Seebeck coefficient and resistivity of materials		
[NASA-CASE-NPO-11749]	c14 N73-28486	
Dual purpose optical instrument capable of simultaneously acting as spectrometer and		
diffractionmeter		
[NASA-CASE-NXP-05231]	c14 N73-28491	
Continuous magnetic flux pump		
[NASA-CASE-NXP-01187]	c15 N73-28516	
Preparation of alkali metal dispersions		
[NASA-CASE-NXP-08876]	c17 N73-28573	
Superconductive magnetic-field-trapping device		
[NASA-CASE-NXP-01185]	c26 N73-28710	
Automatic carrier acquisition system		
[NASA-CASE-NPO-11628-1]	c07 N73-30113	
Pierrofluidic solenoid		
[NASA-CASE-NPO-11738-1]	c09 N73-30185	
Silent emergency alarm system for schools and the like		
[NASA-CASE-NPO-11307-1]	c10 N73-30205	
RF-source resistance meters		
[NASA-CASE-NPO-11291-1]	c14 N73-30388	
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[NASA-CASE-NPO-11703-1]	c10 N73-32144	
Soil penetrometer		
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Quadrupole mass filter with means to generate a noise spectrum exclusive of the resonant frequency of the desired ions to deflect stable ions		
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Magnetic-flux pump		
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[NASA-CASE-NXP-07169]	c15 N73-32362	
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[NASA-CASE-NPO-11942-1]	c33 N73-32818	
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Controlled oscillator system with a time dependent output frequency		
[NASA-CASE-NPO-11962-1]	c09 N74-10194	
Low loss dichroic plate		
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Image data rate converter having a drum with a fixed head and a rotatable head		
[NASA-CASE-NPO-11659-1]	c14 N74-11283	
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Temperature compensated digital inertial sensor		
[NASA-CASE-NPO-13044-1]	c14 N74-15094	
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[NASA-CASE-NPO-11682-1]	c15 N74-15127	
Short range laser obstacle detector		
[NASA-CASE-NPO-11856-1]	c16 N74-15145	
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[NASA-CASE-NPO-13138-1]	c09 N74-17927	
Method of forming a wick for a heat pipe		
[NASA-CASE-NPO-13391-1]	c33 N74-19584	
Storage battery comprising negative plates of a wedge shaped configuration		
[NASA-CASE-NPO-11806-1]	c03 N74-19693	
Gated compressor, distortionless signal limiter		
[NASA-CASE-NPO-11820-1]	c07 N74-19788	
Apparatus for scanning the surface of a cylindrical body		
[NASA-CASE-NPO-11861-1]	c14 N74-20009	
Decision feedback loop for tracking a polyphase modulated carrier		
[NASA-CASE-NPO-13103-1]	c07 N74-20811	
Optically actuated two position mechanical mover		
[NASA-CASE-NPO-13105-1]	c15 N74-21060	
Thin film gauge		
[NASA-CASE-NPO-10617-1]	c14 N74-22095	
High isolation RF signal selection switches		
[NASA-CASE-NPO-13081-1]	c07 N74-22814	
Single reflector interference spectrometer and drive system therefor		
[NASA-CASE-NPO-11932-1]	c14 N74-23040	
Scanning nozzle plating system		
[NASA-CASE-NPO-11758-1]	c15 N74-23065	

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[NASA-CASE-XNP-10007-1]	c15	N74-23068	[NASA-CASE-NPO-13535-1]	c37 N75-21637
Rock sampling			High resolution Fourier	
[NASA-CASE-XNP-09755]	c15	N74-23069	interferometer-spectrophotopolarimeter	
Miniature multichannel biotelemetry system			[NASA-CASE-NPO-13604-1]	c35 N75-22688
[NASA-CASE-NPO-13065-1]	c05	N74-26625	Myocardium wall thickness transducer	
Dispensing targets for ion beam particle			[NASA-CASE-NPO-13644-1]	c35 N75-22689
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[NASA-CASE-NPO-13112-1]	c11	N74-26767	[NASA-CASE-NPO-13567-1]	c37 N75-22746
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[NASA-CASE-NPO-13482-1]	c03	N74-30448	Wide angle sun sensor	
Coherent receiver employing nonlinear coherence			[NASA-CASE-NPO-13327-1]	c35 N75-23910
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[NASA-CASE-NPO-11921-1]	c07	N74-30523	excited resonant chamber	
Computer interface system			[NASA-CASE-NPO-13263-1]	c12 N75-24774
[NASA-CASE-NPO-13428-1]	c08	N74-30549	Heat operated cryogenic electrical generator	
Digital servo control of random sound test			[NASA-CASE-NPO-13303-1]	c20 N75-24837
excitation			System for interference signal nulling by	
[NASA-CASE-NPO-11623-1]	c23	N74-31148	polarization adjustment	
Ion and electron detector for use in an ICR			[NASA-CASE-NPO-13140-1]	c32 N75-24982
spectrometer			Heat detection and compositions and devices	
[NASA-CASE-NPO-13479-1]	c14	N74-32890	therefor	
Apparatus for forming drive belts			[NASA-CASE-NPO-10764-2]	c35 N75-25122
[NASA-CASE-NPO-13205-1]	c15	N74-32917	Servo-controlled intravitral microscope system	
Tool for use in lifting pin supported objects			[NASA-CASE-NPO-13214-1]	c35 N75-25123
[NASA-CASE-NPO-13157-1]	c15	N74-32918	Catheter tip force transducer for cardiovascular	
Preparing oxidizer coated metal fuel particles			research	
[NASA-CASE-NPO-11975-1]	c27	N74-33209	[NASA-CASE-NPO-13643-1]	c54 N75-25598
Double discharge metal vapor laser with metal			Vehicle locating system utilizing AM	
halide as a lasant			broadcasting station carriers	
[NASA-CASE-NPO-13448-1]	c16	N74-34012	[NASA-CASE-NPO-13217-1]	c32 N75-26194
Annular arc accelerator shock tube			Asynchronous, multiplexing, single line	
[NASA-CASE-NPO-13528-1]	c09	N75-11997	transmission and recovery data system	
Thermocouple installation			[NASA-CASE-NPO-13321-1]	c32 N75-26195
[NASA-CASE-NPO-13540-1]	c35	N75-12276	Charge-coupled device data processor for an	
Fiber distributed feedback laser			airborne imaging radar system	
[NASA-CASE-NPO-13531-1]	c36	N75-13243	[NASA-CASE-NPO-13587-1]	c32 N75-26206
Geneva mechanism			Space communication system for compressed data	
[NASA-CASE-NPO-13281-1]	c37	N75-13266	with a concatenated Reed Solomon-Viterbi	
Real time analysis of voiced sounds			coding channel	
[NASA-CASE-NPO-13465-1]	c71	N75-13593	[NASA-CASE-NPO-13545-1]	c32 N75-26207
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[NASA-CASE-NPO-13050-1]	c36	N75-15029	Fluorescence detector for monitoring atmospheric	
Combined pressure regulator and shutoff valve			pollutants	
[NASA-CASE-NPO-13201-1]	c37	N75-15050	[NASA-CASE-NPO-13231-1]	c45 N75-27585
Simultaneous acquisition of tracking data from			Cooperative multiaxis sensor for teleoperation	
two stations			of article manipulating apparatus	
[NASA-CASE-NPO-13292-1]	c32	N75-15854	[NASA-CASE-NPO-13386-1]	c54 N75-27758
The dc-to-dc converters employing staggered			Heat sterilizable patient ventilator	
phase power switches with two loop control			[NASA-CASE-NPO-13313-1]	c54 N75-27761
[NASA-CASE-NPO-13512-1]	c33	N75-15876	Low cost solar energy collection system	
Soft X-ray laser using crystal channels as			[NASA-CASE-NPO-13579-1]	c44 N75-28519
distributed feedback cavities			Cryostat system for temperatures on the order of	
[NASA-CASE-NPO-13532-1]	c36	N75-15973	2 deg K or less	
Method and apparatus for generating coherent			[NASA-CASE-NPO-13459-1]	c31 N75-29277
radiation in the ultraviolet region and above			Method and apparatus for background signal	
by use of distributed feedback			reduction in opto-acoustic absorption	
[NASA-CASE-NPO-13346-1]	c70	N75-16307	measurement	
Scattering independent determination of			[NASA-CASE-NPO-13683-1]	c35 N75-29383
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radiative equilibrium state			[NASA-CASE-NPO-13504-1]	c33 N75-30430
[NASA-CASE-NPO-13677-1]	c35	N75-16791	Electric power generation system directory from	
Wind sensor			laser power	
[NASA-CASE-NPO-13462-1]	c35	N75-16807	[NASA-CASE-NPO-13308-1]	c36 N75-30524
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[NASA-CASE-NPO-13490-1]	c36	N75-16827	[NASA-CASE-NPO-13423-1]	c33 N75-31329
Low to high temperature energy conversion system			Symmetrical odd-modulus frequency divider	
[NASA-CASE-NPO-13510-1]	c44	N75-16972	[NASA-CASE-NPO-13426-1]	c33 N75-31330
Shock absorbing mount for electrical components			Stored charge transistor	
[NASA-CASE-NPO-13253-1]	c37	N75-18573	[NASA-CASE-NPO-11156-2]	c33 N75-31331
System for generating timing and control signals			Doped Josephson tunneling junction for use in a	
[NASA-CASE-NPO-13125-1]	c33	N75-19519	sensitive IR detector	
Motor run-up system			[NASA-CASE-NPO-13348-1]	c33 N75-31332
[NASA-CASE-NPO-13374-1]	c33	N75-19524	Acoustically controlled distributed feedback laser	
Frequency scanning particle size spectrometer			[NASA-CASE-NPO-13175-1]	c36 N75-31427
[NASA-CASE-NPO-13606-1]	c35	N75-19627	An improved furlable antenna	
Particle size spectrometer and refractometer			[NASA-CASE-NPO-13553-1]	c32 N75-32281
[NASA-CASE-NPO-13614-1]	c35	N75-19628	Distributed feedback acoustic surface wave	
Deep trap, laser activated image converting system			oscillator	
[NASA-CASE-NPO-13131-1]	c36	N75-19652	[NASA-CASE-NPO-13673-1]	c33 N75-32323
Multitarget sequential sputtering apparatus			Inert gas metallic vapor laser	
[NASA-CASE-NPO-13345-1]	c37	N75-19684	[NASA-CASE-NPO-13449-1]	c36 N75-32441
Method and apparatus for providing a servodrive			Lightweight reflector assembly and method	
signal in a high speed stepping interferometer			[NASA-CASE-NPO-13707-1]	c74 N75-32894
[NASA-CASE-NPO-13569-1]	c35	N75-21600		

Sun direction detection system  
[NASA-CASE-NPO-13722-1] c19 N75-33169

High temperature oxidation resistant cermet compositions  
[NASA-CASE-NPO-13666-1] c27 N76-13293

High temperature resistant cermet and ceramic compositions  
[NASA-CASE-NPO-13690-1] c27 N76-13294

Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c35 N76-13456

Helium refrigerator  
[NASA-CASE-NPO-13435-1] c31 N76-14284

Nonlinear nonsingular feedback shift registers  
[NASA-CASE-NPO-13451-1] c33 N76-14373

Strain gage mounting assembly  
[NASA-CASE-NPO-13170-1] c35 N76-14430

Interferometer mirror tilt correcting system  
[NASA-CASE-NPO-13687-1] c35 N76-14433

Forward-scatter polarimeter for determining the gaseous depolarization factor in the presence of polluting polydispersed particles  
[NASA-CASE-NPO-13756-1] c35 N76-14434

Thermostatically controlled non-tracking type solar energy concentrator  
[NASA-CASE-NPO-13497-1] c44 N76-14602

Multi-computer multiple data path hardware exchange system  
[NASA-CASE-NPO-13422-1] c60 N76-14818

Cermet composition and method of fabrication  
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[NASA-CASE-NPO-13506-1] c35 N76-15435

Control for nuclear thermionic power source  
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Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c35 N76-16390

Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c35 N76-16391

Hydrogen rich gas generator  
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Photon excited catalysis  
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A machine for use in monitoring fatigue life for a plurality of elastomeric specimens  
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[NASA-CASE-NPO-13063-1] c25 N76-18245

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Sampler of gas borne particles  
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Stark-effect modulation of CO2 laser with NH2D  
[NASA-CASE-NPO-11945-1] c36 N76-18427

Diffused waveguiding capillary tube with distributed feedback for a gas laser  
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System for minimizing internal combustion engine pollution emission  
[NASA-CASE-NPO-13402-1] c37 N76-18457

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Priority interrupt system  
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Acoustic energy shaping  
[NASA-CASE-NPO-13802-1] c71 N76-18886

Miniature muscle displacement transducer  
[NASA-CASE-NPO-13519-1] c33 N76-19338

Zero torque gear head wrench  
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Method and apparatus for measurement of trap density and energy distribution in dielectric films  
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Indicator providing continuous indication of the presence of a specific pollutant in air

[NASA-CASE-NPO-13474-1] c45 N76-21742

Shared memory for a fault-tolerant computer  
[NASA-CASE-NPO-13139-1] c60 N76-21914

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Open loop digital frequency multiplier  
[NASA-CASE-MSC-12709-1] c33 N76-13377

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Unfurlable structure including coiled strips thrust launched upon tension release Patent  
[NASA-CASE-HQN-00937] c07 N71-28979

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Excitation and detection circuitry for a flux responsive magnetic head  
[NASA-CASE-XNP-04183] c09 N69-24329

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[NASA-CASE-XAC-04885] c14 N71-23790

Control device Patent  
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Transducer circuit and catheter transducer Patent  
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- Solid medium thermal engine  
[NASA-CASE-ARC-10461-1] c33 N74-33379
- Hingeless helicopter rotor with improved stability  
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- Automated analysis of oxidative metabolites  
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- Method of preparing water purification membranes  
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- Method of forming aperture plate for electron microscope  
[NASA-CASE-ARC-10448-2] c74 N75-12732
- Integrated lift/drag controller for aircraft  
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- Wind tunnel flow generation section  
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- Water purification process  
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- Continuous Fourier transform method and apparatus  
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- System for measuring Reynolds stress in a turbulently flowing fluid  
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- Dual wavelength scanning Doppler velocimeter  
[NASA-CASE-ARC-10637-1] c35 N75-16783
- Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c35 N75-18536
- Signal conditioning circuit apparatus  
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- Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-3] c33 N75-19520
- Accelerometer telemetry system  
[NASA-CASE-ARC-10849-1] c35 N75-20685
- Reversed cowl flap inlet thrust augmentor  
[NASA-CASE-ARC-10754-1] c07 N75-24736
- Process for preparing low density polybenzimidazole foams  
[NASA-CASE-ARC-10823-1] c27 N75-24938
- Diode-quad bridge circuit means  
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- High speed data monitoring apparatus  
[NASA-CASE-ARC-10899-1] c35 N75-25127
- Rotary plant growth accelerating apparatus  
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- Shoulder harness and lap belt restraint system  
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- Preparation of dielectric coatings of variable dielectric constant by plasma polymerization  
[NASA-CASE-ARC-10892-1] c27 N75-26136
- Gas chromatograph injection system  
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- Reference apparatus for medical ultrasonic transducer  
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- Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c33 N75-29318
- G-load measuring and indicator apparatus  
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- NDIR gas analyzer based on absorption modulation ratios for known and unknown samples  
[NASA-CASE-ARC-10802-1] c35 N75-30502
- Jet engine air intake system  
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- Diatomic infrared gasdynamic laser  
[NASA-CASE-ARC-10370-1] c36 N75-31426
- Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c34 N75-32389
- Metallic hot wire anemometer and method for fabricating the same  
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- Pneumatic load compensating or controlling system  
[NASA-CASE-ARC-10907-1] c37 N75-32465
- Automatic fluid dispenser  
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- Smoke generator  
[NASA-CASE-ARC-10905-1] c31 N75-33278
- Thermistor holder for skin temperature measurements  
[NASA-CASE-ARC-10855-1] c52 N75-33642
- Full color hybrid display for aircraft simulators  
[NASA-CASE-ARC-10903-1] c09 N76-10148
- Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c37 N76-11441
- Capacitive shaft encoder  
[NASA-CASE-ARC-10897-1] c35 N76-12338
- Rotating launch device for a remotely piloted aircraft  
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- Abrasion resistant coatings for plastic surfaces  
[NASA-CASE-ARC-10915-1] c27 N76-13292
- Method for making a hot wire anemometer and product thereof  
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- Tubular sublimator/evaporator heat sink  
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- Combined dual scatter, local oscillator laser Doppler velocimeter  
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- Fiber modified polyurethane foam for ballistic protection  
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- Transparent fire resistant polymeric structures  
[NASA-CASE-ARC-10813-1] c27 N76-16230
- Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c07 N76-18131
- Modulated hydrogen ion flame detector  
[NASA-CASE-ARC-10322-1] c35 N76-18403
- Liquid-cooled brassiere  
[NASA-CASE-ARC-11007-1] c52 N76-18782
- Electrical conductivity cell and method for fabricating the same  
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- System for measuring three fluctuating velocity components in a turbulently flowing fluid  
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- Tread drum for animals  
[NASA-CASE-ARC-10917-1] c37 N76-20485
- Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector  
[NASA-CASE-ARC-10631-1] c74 N76-20958
- Optical instrument employing reticle having preselected visual response pattern formed thereon  
[NASA-CASE-ARC-10976-1] c74 N76-20959
- Trielectrode capacitive pressure transducer  
[NASA-CASE-ARC-10711-2] c33 N76-21390
- NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. ELECTRONICS RESEARCH CENTER, CAMBRIDGE, MASS.**
- Method and apparatus for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c16 N69-31343
- A method for the deposition of beta-silicon carbide by isoeptitary  
[NASA-CASE-ERC-10120] c26 N69-33482
- Full flow with shut off and selective drainage control valve Patent application  
[NASA-CASE-ERC-10208] c15 N70-10867
- A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
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- Apparatus and method for separating a semiconductor wafer Patent  
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[NASA-CASE-XER-09519] c14 N71-18483
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[NASA-CASE-XER-07894] c09 N71-18721
- Array phasing device Patent  
[NASA-CASE-ERC-10046] c10 N71-18722
- Parametric microwave noise generator Patent  
[NASA-CASE-XER-11019] c09 N71-23598
- Saturation current protection apparatus for saturable core transformers Patent  
[NASA-CASE-ERC-10075] c09 N71-24800
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[NASA-CASE-ERC-10178] c16 N71-24832
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 [NASA-CASE-ERC-10125] c09 N71-24893  
 Leak detector wherein a probe is monitored with  
 ultraviolet radiation Patent  
 [NASA-CASE-ERC-10034] c15 N71-24896  
 Method for detecting leaks in hermetically  
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 [NASA-CASE-ERC-10045] c15 N71-24910  
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 [NASA-CASE-ERC-10090] c21 N71-24948  
 Transverse piezoresistance and pinch effect  
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 [NASA-CASE-ERC-10088] c26 N71-25490  
 A solid state acoustic variable time delay line  
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 [NASA-CASE-ERC-10022] c15 N71-26635  
 Method and apparatus for detecting gross leaks  
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 [NASA-CASE-ERC-10033] c14 N71-26672  
 Field ionization electrodes Patent  
 [NASA-CASE-ERC-10013] c09 N71-26678  
 Voltage regulator Patent  
 [NASA-CASE-ERC-10113] c09 N71-27053  
 A multichannel photoionization chamber for  
 absorption analysis Patent  
 [NASA-CASE-ERC-10044-1] c14 N71-27090  
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 [NASA-CASE-ERC-10087] c14 N71-27334  
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 [NASA-CASE-ERC-10065] c09 N71-27364  
 Fluid power transmitting gas bearing Patent  
 [NASA-CASE-ERC-10097] c15 N71-28465  
 Color television systems using a single gun  
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 [NASA-CASE-ERC-10098] c09 N71-28618  
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 fluid materials Patent  
 [NASA-CASE-ERC-10014] c14 N71-28863  
 Orifice gross leak tester Patent  
 [NASA-CASE-ERC-10150] c14 N71-28992  
 Device for measuring light scattering wherein  
 the measuring beam is successively reflected  
 between a pair of parallel reflectors Patent  
 [NASA-CASE-ERC-11203] c14 N71-28994  
 Quasi-optical microwave component Patent  
 [NASA-CASE-ERC-10011] c07 N71-29065  
 Multiple hologram recording and readout system  
 Patent  
 [NASA-CASE-ERC-10151] c16 N71-29131  
 Plasma fluidic hybrid display Patent  
 [NASA-CASE-ERC-10100] c09 N71-33519  
 Optical systems having spatially invariant outputs  
 [NASA-CASE-ERC-10248] c14 N72-17323  
 Method of detecting impending saturation of  
 magnetic cores  
 [NASA-CASE-ERC-10089] c23 N72-17747  
 Improved satellite aided vehicle avoidance system  
 [NASA-CASE-ERC-10419] c21 N72-21631  
 Logarithmic function generator utilizing an  
 exponentially varying signal in an inverse  
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 [NASA-CASE-ERC-10267] c09 N72-23173  
 Method and apparatus for limiting field emission  
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 [NASA-CASE-ERC-10015-2] c10 N72-27246  
**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.**  
**FLIGHT RESEARCH CENTER, EDWARDS, CALIF.**  
 Rocket chamber leak test fixture  
 [NASA-CASE-XPR-09479] c14 N69-27503  
 Three axis controller Patent  
 [NASA-CASE-XPR-00181] c21 N70-33279  
 Catalyst bed removing tool Patent  
 [NASA-CASE-XPR-00811] c15 N70-36901  
 Two-axis controller Patent  
 [NASA-CASE-XPR-04104] c03 N70-42073  
 Controlled visibility device for an aircraft  
 Patent  
 [NASA-CASE-XPR-04147] c11 N71-10748  
 Biomedical electrode arrangement Patent  
 [NASA-CASE-XPR-10856] c05 N71-11189  
 Lifting body Patent Application  
 [NASA-CASE-FRC-10063] c01 N71-12217  
 Energy management system for glider type vehicle  
 Patent  
 [NASA-CASE-XPR-00756] c02 N71-13421  
 Quick attach mechanism Patent  
 [NASA-CASE-XPR-05421] c15 N71-22994  
 Heat flux measuring system Patent  
 [NASA-CASE-XPR-03802] c33 N71-23085  
 Threadless fastener apparatus Patent  
 [NASA-CASE-XPR-05302] c15 N71-23254  
 Traversing probe Patent  
 [NASA-CASE-XPR-02007] c12 N71-24692  
 Layout tool Patent  
 [NASA-CASE-XPR-10005] c15 N71-26145  
 Pulsed excitation voltage circuit for transducers  
 [NASA-CASE-FRC-10036] c09 N72-22200  
 Acoustical transducer calibrating system and  
 apparatus  
 [NASA-CASE-FRC-10060-1] c14 N73-27379  
 Three-axis adjustable loading structure  
 [NASA-CASE-FRC-10051-1] c14 N74-13129  
 Terminal guidance system  
 [NASA-CASE-FRC-10049-1] c21 N74-13420  
 Full wave modulator-demodulator amplifier  
 apparatus  
 [NASA-CASE-FRC-10072-1] c09 N74-14939  
 Rotating raster generator  
 [NASA-CASE-FRC-10071-1] c07 N74-20813  
 An improved fifth wheel  
 [NASA-CASE-FRC-10081-1] c37 N75-29432  
**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.**  
**GODDARD SPACE FLIGHT CENTER, GREENBELT, MD.**  
 Regulated dc to dc converter  
 [NASA-CASE-XGS-03429] c03 N69-21330  
 Apparatus for measuring swelling characteristics  
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 [NASA-CASE-XGS-03865] c14 N69-21363  
 Tumbler system to provide random motion  
 [NASA-CASE-XGS-02437] c15 N69-21472  
 Automatic acquisition system for phase-lock loop  
 [NASA-CASE-XGS-04994] c09 N69-21543  
 Low power drain semi-conductor circuit  
 [NASA-CASE-XGS-04999] c09 N69-24317  
 Spacecraft battery seals  
 [NASA-CASE-XGS-03864] c15 N69-24320  
 Scanning aspect sensor employing an apertured  
 disc and a commutator  
 [NASA-CASE-XGS-08266] c14 N69-27432  
 Monopulse system with an electronic scanner  
 [NASA-CASE-XGS-05582] c07 N69-27460  
 Ring counter  
 [NASA-CASE-XGS-03095] c09 N69-27463  
 Retrodirective optical system  
 [NASA-CASE-XGS-04480] c16 N69-27491  
 Time division multiplex system  
 [NASA-CASE-XGS-05918] c07 N69-39974  
 Doppler frequency spread correction device for  
 multiplex transmissions  
 [NASA-CASE-XGS-02749] c07 N69-39978  
 Alkali-metal silicate protective coating  
 [NASA-CASE-XGS-04119] c18 N69-39979  
 Device for measuring electron-beam intensities  
 and for subjecting materials to electron  
 irradiation in an electron microscope  
 [NASA-CASE-XGS-01725] c14 N69-39982  
 Light sensitive digital aspect sensor Patent  
 [NASA-CASE-XGS-00359] c14 N70-34158  
 Method and apparatus for determining satellite  
 orientation utilizing spatial energy sources  
 Patent  
 [NASA-CASE-XGS-00466] c21 N70-34297  
 Binary magnetic memory device Patent  
 [NASA-CASE-XGS-00174] c08 N70-34743  
 Full binary adder Patent  
 [NASA-CASE-XGS-00689] c08 N70-34787  
 Ultra-long monostable multivibrator employing  
 bistable semiconductor switch to allow  
 charging of timing circuit Patent  
 [NASA-CASE-XGS-00381] c09 N70-34819  
 Controlled caging and uncaging mechanism Patent  
 Application  
 [NASA-CASE-GSC-11063-1] c03 N70-35584  
 Space and atmospheric reentry vehicle Patent  
 [NASA-CASE-XGS-00260] c31 N70-37924  
 Variable frequency magnetic multivibrator Patent  
 [NASA-CASE-XGS-00458] c09 N70-38604  
 Switching mechanism with energy storage means  
 Patent  
 [NASA-CASE-XGS-00473] c03 N70-38713

Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00131] c09 N70-38995

Stretch de-spin mechanism Patent  
[NASA-CASE-XGS-00619] c30 N70-40016

Folding boom assembly Patent  
[NASA-CASE-XGS-00938] c32 N70-41367

Cryogenic connector for vacuum use Patent  
[NASA-CASE-XGS-02441] c15 N70-41629

Endless tape cartridge Patent  
[NASA-CASE-XGS-00769] c14 N70-41647

Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c14 N70-41676

Method and apparatus for determining electromagnetic characteristics of large surface area passive reflectors Patent  
[NASA-CASE-XGS-02608] c07 N70-41678

Prevention of pressure build-up in electrochemical cells Patent  
[NASA-CASE-XGS-01419] c03 N70-41864

Variable time constant smoothing circuit Patent  
[NASA-CASE-XGS-01983] c10 N70-41964

Endless tape transport mechanism Patent  
[NASA-CASE-XGS-01223] c07 N71-10609

Reversible ring counter employing cascaded single SCR stages Patent  
[NASA-CASE-XGS-01473] c09 N71-10673

Electronic beam switching commutator Patent  
[NASA-CASE-XGS-01451] c09 N71-10677

Sun tracker with rotatable plane-parallel plate and two photocells Patent  
[NASA-CASE-XGS-01159] c21 N71-10678

Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c03 N71-11053

Interconnection of solar cells Patent  
[NASA-CASE-XGS-01475] c03 N71-11058

Frequency shift keyed demodulator Patent  
[NASA-CASE-XGS-02889] c07 N71-11282

Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c07 N71-12392

Data processor having multiple sections activated at different times by selective power coupling to the sections Patent  
[NASA-CASE-XGS-04767] c08 N71-12494

Position location system and method Patent  
[NASA-CASE-GSC-10087-2] c21 N71-13958

Pire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c18 N71-14014

Passively regulated water electrolysis rocket engine Patent  
[NASA-CASE-XGS-08729] c28 N71-14044

Attitude control system Patent  
[NASA-CASE-XGS-04393] c21 N71-14159

Retrodirective modulator Patent  
[NASA-CASE-GSC-10062] c14 N71-15605

Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c21 N71-15642

Cartwheel satellite synchronization system Patent  
[NASA-CASE-XGS-05579] c31 N71-15676

Wide range linear fluxgate magnetometer Patent  
[NASA-CASE-XGS-01587] c14 N71-15962

Low friction magnetic recording tape Patent  
[NASA-CASE-XGS-00373] c23 N71-15978

Method for etching copper Patent  
[NASA-CASE-XGS-06306] c17 N71-16044

Bacteriostatic conformal coating and methods of application Patent  
[NASA-CASE-GSC-10007] c18 N71-16046

Serrodyne frequency converter re-entrant amplifier system Patent  
[NASA-CASE-XGS-01022] c07 N71-16088

Position location and data collection system and method Patent  
[NASA-CASE-GSC-10083-1] c30 N71-16090

Position sensing device employing misaligned magnetic field generating and detecting apparatus Patent  
[NASA-CASE-XGS-07514] c23 N71-16099

Optical tracker having overlapping reticles on parallel axes Patent  
[NASA-CASE-XGS-05715] c23 N71-16100

Self-erecting reflector Patent  
[NASA-CASE-XGS-09190] c31 N71-16102

Dust particle injector for hypervelocity accelerators Patent  
[NASA-CASE-XGS-06628] c24 N71-16213

Ellipsoidal mirror reflectometer including means for averaging the radiation reflected from the sample Patent  
[NASA-CASE-XGS-05291] c23 N71-16341

Angular position and velocity sensing apparatus Patent  
[NASA-CASE-XGS-05680] c14 N71-17585

Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
[NASA-CASE-XGS-03532] c14 N71-17627

Omni-directional anisotropic molecular trap Patent  
[NASA-CASE-XGS-00783] c30 N71-17788

Method of making tubes Patent  
[NASA-CASE-XGS-04175] c15 N71-18579

Pulse-type magnetic core memory element circuit with blocking oscillator feedback Patent  
[NASA-CASE-XGS-03303] c08 N71-18595

Ripple add and ripple subtract binary counters Patent  
[NASA-CASE-XGS-04766] c08 N71-18602

Computing apparatus Patent  
[NASA-CASE-XGS-04765] c08 N71-18693

Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c10 N71-18772

Traffic control system and method Patent  
[NASA-CASE-GSC-10087-1] c02 N71-19287

Apparatus for measuring current flow Patent  
[NASA-CASE-XGS-02439] c14 N71-19431

Synchronous counter Patent  
[NASA-CASE-XGS-02440] c08 N71-19432

Wide range data compression system Patent  
[NASA-CASE-XGS-02612] c08 N71-19435

Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c08 N71-19437

Method and apparatus for battery charge control Patent  
[NASA-CASE-XGS-05432] c03 N71-19438

Stable amplifier having a stable quiescent point Patent  
[NASA-CASE-XGS-02812] c09 N71-19466

Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c07 N71-19854

Electrochemical coulometer and method of forming same Patent  
[NASA-CASE-XGS-05434] c03 N71-20491

Display for binary characters Patent  
[NASA-CASE-XGS-04987] c08 N71-20571

Amplifier clamping circuit for horizon scanner Patent  
[NASA-CASE-XGS-01784] c10 N71-20782

Diversity receiving system with diversity phase lock Patent  
[NASA-CASE-XGS-01222] c10 N71-20841

Signal detection and tracking apparatus Patent  
[NASA-CASE-XGS-03502] c10 N71-20852

Polarization diversity monopulse tracking receiver Patent  
[NASA-CASE-XGS-03501] c09 N71-20864

System for recording and reproducing pulse code modulated data Patent  
[NASA-CASE-XGS-01021] c08 N71-21042

Satellite appendage tie down cord Patent  
[NASA-CASE-XGS-02554] c31 N71-21064

Reaction wheel scanner Patent  
[NASA-CASE-XGS-02629] c14 N71-21082

Nonmagnetic, explosive actuated indexing device Patent  
[NASA-CASE-XGS-02422] c15 N71-21529

Bidirectional step torque filter with zero backlash characteristic Patent  
[NASA-CASE-XGS-04227] c15 N71-21744

Conforming polisher for aspheric surface of revolution Patent  
[NASA-CASE-XGS-02884] c15 N71-22705

Precision thrust gage Patent  
[NASA-CASE-XGS-02319] c14 N71-22965

Sealing device for an electrochemical cell Patent  
[NASA-CASE-XGS-02630] c03 N71-22974

Rotary bead dropper and selector for testing micrometeorite detectors Patent  
[NASA-CASE-XGS-03304] c09 N71-22988

Moment of inertia test fixture Patent  
[NASA-CASE-XGS-01023] c14 N71-22992

Fluid flow meter with comparator reference means Patent  
[NASA-CASE-XGS-01331] c14 N71-22996

Foamed in place ceramic refractory insulating material Patent

[NASA-CASE-XGS-02435]	c18 N71-22998	Synchronous dc direct drive system Patent	[NASA-CASE-GSC-10065-1]	c10 N71-27136
Digital telemetry system Patent		Antenna array at focal plane of reflector with coupling network for beam switching Patent	[NASA-CASE-GSC-10220-1]	c07 N71-27233
[NASA-CASE-XGS-01812]	c07 N71-23001	Gravity gradient attitude control system Patent	[NASA-CASE-GSC-10555-1]	c21 N71-27324
Bonded elastomeric seal for electrochemical cells Patent		Segmented superconducting magnet for a broadband traveling wave maser Patent	[NASA-CASE-XGS-10518]	c16 N71-28554
[NASA-CASE-XGS-02631]	c03 N71-23006	Millimeter wave antenna system Patent Application	[NASA-CASE-GSC-10949-1]	c07 N71-28965
Apparatus providing a directive field pattern and attitude sensing of a spin stabilized satellite Patent		Sampled data controller Patent	[NASA-CASE-GSC-10554-1]	c08 N71-29033
[NASA-CASE-XGS-02607]	c31 N71-23009	Variable digital processor including a register for shifting and rotating bits in either direction Patent	[NASA-CASE-GSC-10186]	c08 N71-33110
Complementary regenerative switch Patent		Combustion products generating and metering device	[NASA-CASE-GSC-11095-1]	c14 N72-10375
[NASA-CASE-XGS-02751]	c09 N71-23015	Analog spatial maneuver computer	[NASA-CASE-GSC-10880-1]	c08 N72-11172
Solid state pulse generator with constant output width, for variable input width, in nanosecond range Patent		Helical recorder arrangement for multiple channel recording on both sides of the tape	[NASA-CASE-GSC-10614-1]	c09 N72-11224
[NASA-CASE-XGS-03427]	c10 N71-23029	Method and apparatus for eliminating coherent noise in a coherent energy imaging system without destroying spatial coherence	[NASA-CASE-GSC-11133-1]	c23 N72-11568
Sidereal frequency generator Patent		Position location system and method	[NASA-CASE-GSC-10087-3]	c07 N72-12080
[NASA-CASE-XGS-02610]	c14 N71-23174	Facsimile video remodulation network	[NASA-CASE-GSC-10185-1]	c07 N72-12081
Solar cell and circuit array and process for nullifying magnetic fields Patent		Frangible electrochemical cell	[NASA-CASE-XGS-10010]	c03 N72-15986
[NASA-CASE-XGS-03390]	c03 N71-23187	Caterpillar micro positioner	[NASA-CASE-GSC-10780-1]	c14 N72-16283
Passive synchronized spike generator with high input impedance and low output impedance and capacitor power supply Patent		Minimech self-deploying boom mechanism	[NASA-CASE-GSC-10566-1]	c15 N72-18477
[NASA-CASE-XGS-03632]	c09 N71-23311	Heated porous plug microthruster	[NASA-CASE-GSC-10640-1]	c28 N72-18766
Sealed electrochemical cell provided with a flexible casing Patent		Optimum performance spacecraft solar cell system	[NASA-CASE-GSC-10669-1]	c03 N72-20031
[NASA-CASE-XGS-01513]	c03 N71-23336	Monostable multivibrator	[NASA-CASE-GSC-10082-1]	c10 N72-20221
Digitally controlled frequency synthesizer Patent		Roll alignment detector	[NASA-CASE-GSC-10514-1]	c14 N72-20379
[NASA-CASE-XGS-02317]	c09 N71-23525	Cosmic dust sensor	[NASA-CASE-GSC-10503-1]	c14 N72-20381
Radio frequency coaxial high pass filter Patent		Solenoid valve including guide for armature and valve member	[NASA-CASE-GSC-10607-1]	c15 N72-20442
[NASA-CASE-XGS-01418]	c09 N71-23573	Fast response low power drain logic circuits	[NASA-CASE-GSC-10878-1]	c10 N72-22236
Apparatus for phase stability determination Patent		Trap for preventing diffusion pump backstreaming	[NASA-CASE-GSC-10518-1]	c15 N72-22489
[NASA-CASE-XGS-01118]	c10 N71-23662	Resistance soldering apparatus	[NASA-CASE-GSC-10913]	c15 N72-22491
Tape recorder Patent		Optical system support apparatus	[NASA-CASE-XER-07896-2]	c23 N72-22673
[NASA-CASE-XGS-08259]	c14 N71-23698	SCR lamp driver	[NASA-CASE-GSC-10221-1]	c09 N72-23171
Balance torque meter Patent		Potassium silicate zinc coatings	[NASA-CASE-GSC-10361-1]	c18 N72-23581
[NASA-CASE-XGS-01013]	c14 N71-23725	Synchronous orbit battery cyclor	[NASA-CASE-GSC-11211-1]	c03 N72-25020
Mechanical actuator Patent		Flavin coenzyme assay	[NASA-CASE-GSC-10565-1]	c06 N72-25149
[NASA-CASE-XGS-04548]	c15 N71-24045	Location identification system	[NASA-CASE-ERC-10324]	c07 N72-25173
Selective plating of etched circuits without removing previous plating Patent		A dc to ac to dc converter having transistor synchronous rectifiers	[NASA-CASE-GSC-11126-1]	c09 N72-25253
[NASA-CASE-XGS-03120]	c15 N71-24047	Tungsten contacts on silicon substrates	[NASA-CASE-GSC-10695-1]	c09 N72-25259
Alkali metal silicate protective coating Patent		Bacterial contamination monitor	[NASA-CASE-GSC-10879-1]	c14 N72-25413
[NASA-CASE-XGS-04799]	c18 N71-24183	Honeycomb panels formed of minimal surface periodic tubule layers	[NASA-CASE-ERC-10364]	c18 N72-25540
Strain gauge measuring techniques Patent		Honeycomb core structures of minimal surface tubule sections	[NASA-CASE-ERC-10363]	c18 N72-25541
[NASA-CASE-XGS-04478]	c14 N71-24233	Gunn-type solid state devices	[NASA-CASE-XER-07895]	c26 N72-25679
Electromagnetic polarization systems and methods Patent		Use of unilluminated solar cells as shunt diodes for a solar array	[NASA-CASE-GSC-10344-1]	c03 N72-27053
[NASA-CASE-GSC-10021-1]	c09 N71-24595			
Redundant actuating mechanism Patent				
[NASA-CASE-XGS-08718]	c15 N71-24600			
Satellite communication system and method Patent				
[NASA-CASE-GSC-10118-1]	c07 N71-24621			
Programmable telemetry system Patent				
[NASA-CASE-GSC-10131-1]	c07 N71-24624			
Coulometer and third electrode battery charging circuit Patent				
[NASA-CASE-GSC-10487-1]	c03 N71-24719			
Electronic scanning of 2-channel monopulse patterns Patent				
[NASA-CASE-GSC-10299-1]	c09 N71-24804			
Angular slit colloid thruster Patent				
[NASA-CASE-GSC-10709-1]	c28 N71-25213			
Voltage to frequency converter Patent				
[NASA-CASE-GSC-10022-1]	c10 N71-25882			
Direct current motor with stationary armature and field Patent				
[NASA-CASE-XGS-05290]	c09 N71-25999			
Buck boost voltage regulation circuit Patent				
[NASA-CASE-GSC-10735-1]	c10 N71-26085			
Adaptive system and method for signal generation Patent				
[NASA-CASE-GSC-11367]	c10 N71-26374			
Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent				
[NASA-CASE-XGS-04224]	c10 N71-26418			
Turn on transient limiter Patent				
[NASA-CASE-GSC-10413]	c10 N71-26531			
Voltage regulator with plural parallel power source sections Patent				
[NASA-CASE-GSC-10891-1]	c10 N71-26626			
Method for generating ultra-precise angles Patent				
[NASA-CASE-XGS-04173]	c19 N71-26674			
Resettable monostable pulse generator Patent				
[NASA-CASE-GSC-11139]	c09 N71-27016			
Micro-pound extended range thrust stand Patent				
[NASA-CASE-GSC-10710-1]	c28 N71-27094			

Active tuned circuit  
[NASA-CASE-GSC-11340-1] c10 N72-33230

Electric motive machine including magnetic bearing  
[NASA-CASE-XGS-07805] c15 N72-33476

Cosmic dust or other similar outer space particles impact location detector  
[NASA-CASE-GSC-11291-1] c25 N72-33696

Method and apparatus for determining the contents of contained gas samples  
[NASA-CASE-GSC-10903-1] c14 N73-12444

System for stabilizing torque between a balloon and gondola  
[NASA-CASE-GSC-11077-1] c02 N73-13008

Diffuse reflective coating  
[NASA-CASE-GSC-11214-1] c06 N73-13128

Data processor with conditionally supplied clock signals  
[NASA-CASE-GSC-10975-1] c08 N73-13187

Apparatus for vibrational testing of articles  
[NASA-CASE-GSC-11302-1] c14 N73-13416

Method and system for ejecting fairing sections from a rocket vehicle  
[NASA-CASE-GSC-10590-1] c31 N73-14853

Plural beam antenna  
[NASA-CASE-GSC-11013-1] c09 N73-19234

Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c21 N73-19630

Delayed simultaneous release mechanism  
[NASA-CASE-GSC-10814-1] c03 N73-20039

Doppler compensation by shifting transmitted object frequency within limits  
[NASA-CASE-GSC-10087-4] c07 N73-20174

Telemetry processor  
[NASA-CASE-GSC-11388-1] c07 N73-24187

Signal-to-noise ratio determination circuit  
[NASA-CASE-GSC-11239-1] c10 N73-25241

Nutation damper  
[NASA-CASE-GSC-11205-1] c15 N73-25513

Low outgassing polydimethylsiloxane material and preparation thereof  
[NASA-CASE-GSC-11358-1] c06 N73-26100

Method of detecting and counting bacteria in body fluids  
[NASA-CASE-GSC-11092-2] c04 N73-27052

Protein sterilization method of firefly luciferase using reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c06 N73-27086

Process for making RF shielded cable connector assemblies and the products formed thereby  
[NASA-CASE-GSC-11215-1] c09 N73-28083

Device for determining relative angular position between a spacecraft and a radiation emitting celestial body  
[NASA-CASE-GSC-11444-1] c14 N73-28490

Microscope multi-angle, reflection, viewing adaptor and photographic recording system  
[NASA-CASE-GSC-11690-1] c14 N73-28499

Fastener stretcher  
[NASA-CASE-GSC-11149-1] c15 N73-30457

Spacecraft attitude sensor  
[NASA-CASE-GSC-10890-1] c21 N73-30640

Automatic instrument for chemical processing to detect microorganism in biological samples by measuring light reactions  
[NASA-CASE-GSC-11169-2] c05 N73-32011

Star tracking reticles  
[NASA-CASE-GSC-11188-1] c14 N73-32320

Peen plating  
[NASA-CASE-GSC-11163-1] c15 N73-32360

Ultraviolet light reflective coating  
[NASA-CASE-GSC-11786-1] c18 N74-10542

Recorder/processor apparatus  
[NASA-CASE-GSC-11553-1] c07 N74-15831

Method of making porous conductive supports for electrodes  
[NASA-CASE-GSC-11367-1] c03 N74-19692

Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c14 N74-20008

Radiation hardening of MOS devices by boron  
[NASA-CASE-GSC-11425-1] c24 N74-20329

Amplitude steered array  
[NASA-CASE-GSC-11446-1] c09 N74-20860

Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly  
[NASA-CASE-GSC-11560-1] c09 N74-20861

Ultra-stable oscillator with complementary transistors  
[NASA-CASE-GSC-11513-1] c09 N74-20862

High efficiency multifrequency feed  
[NASA-CASE-GSC-11909] c09 N74-20863

Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c09 N74-20864

Method and apparatus for checking fire detectors  
[NASA-CASE-GSC-11600-1] c14 N74-21019

Long range laser traversing system  
[NASA-CASE-GSC-11262-1] c16 N74-21091

Method and apparatus for optically monitoring the angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c23 N74-21304

Image tube  
[NASA-CASE-GSC-11602-1] c09 N74-21850

Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c07 N74-22827

Apparatus for controlling the temperature of balloon-borne equipment  
[NASA-CASE-GSC-11620-1] c14 N74-23039

Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c14 N74-26949

Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c05 N74-27566

Heat flow calorimeter  
[NASA-CASE-GSC-11434-1] c14 N74-27859

Air conditioning system and component therefore distributing air flow from opposite directions  
[NASA-CASE-GSC-11445-1] c15 N74-27902

Passive dual spin misalignment compensators  
[NASA-CASE-GSC-11479-1] c21 N74-28097

Star scanner  
[NASA-CASE-GSC-11569-1] c14 N74-30886

Millimeter wave pumped parametric amplifier  
[NASA-CASE-GSC-11617-1] c09 N74-32660

Structural heat pipe  
[NASA-CASE-GSC-11619-1] c34 N75-12222

Remote platform power conserving system  
[NASA-CASE-GSC-11182-1] c15 N75-13007

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c37 N75-15992

Inrush current limiter  
[NASA-CASE-GSC-11789-1] c33 N75-16748

Magnetic bearing  
[NASA-CASE-GSC-11079-1] c37 N75-18574

Dish antenna having switchable beamwidth  
[NASA-CASE-GSC-11760-1] c33 N75-19516

X-Y alphanumeric character generator for oscilloscopes  
[NASA-CASE-GSC-11582-1] c33 N75-19517

Controllable high voltage source having fast settling time  
[NASA-CASE-GSC-11844-1] c33 N75-19522

Dually mode locked Nd:YAG laser  
[NASA-CASE-GSC-11746-1] c36 N75-19654

Self-regulating proportionally controlled heating apparatus and technique  
[NASA-CASE-GSC-11752-1] c77 N75-20140

Improved method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c51 N75-21921

Speech analyzer  
[NASA-CASE-GSC-11898-1] c32 N75-22563

Method and apparatus for measuring web material wound on a reel  
[NASA-CASE-GSC-11902-1] c35 N75-22687

Low speed phaselock speed control system  
[NASA-CASE-GSC-11127-1] c09 N75-24758

Modulator for tone and binary signals  
[NASA-CASE-GSC-11743-1] c32 N75-24981

Digital phase-locked loop  
[NASA-CASE-GSC-11623-1] c33 N75-25040

Magnetic tape head function switching system  
[NASA-CASE-GSC-11956-1] c35 N75-25134

Radiation hardening of MOS devices by boron  
[NASA-CASE-GSC-11425-2] c76 N75-25730

Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c09 N75-25966

Correlation type phase detector  
[NASA-CASE-GSC-11744-1] c33 N75-26243

Switchable beamwidth monopulse method and system  
[NASA-CASE-GSC-11924-1] c33 N75-26252

Process for making sheets with parallel pores of uniform size  
[NASA-CASE-GSC-10984-1] c37 N75-26371

Application of luciferase assay for ATP to antimicrobial drug susceptibility testing  
[NASA-CASE-GSC-12039-1] c51 N75-26629

Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c33 N75-27254

Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c33 N75-27265

Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c35 N75-27331

Magnetic bearing system  
[NASA-CASE-GSC-11978-1] c37 N75-27386

Cyclical bi-directional rotary actuator  
[NASA-CASE-GSC-11883-1] c37 N75-29430

Linear phase demodulator  
[NASA-CASE-GSC-12018-1] c17 N76-13169

Method for fabricating a mass spectrometer inlet leak  
[NASA-CASE-GSC-12077-1] c35 N76-13465

Reel safety brake  
[NASA-CASE-GSC-11960-1] c37 N76-13495

Low cost substrates for polycrystalline solar cells  
[NASA-CASE-GSC-12022-1] c44 N76-13597

Binary to binary coded decimal converter  
[NASA-CASE-GSC-12044-1] c60 N76-13781

Single frequency, two feed dish antenna having switchable beamwidth  
[NASA-CASE-GSC-11968-1] c32 N76-15329

Micrometeoroid velocity and trajectory analyzer  
[NASA-CASE-GSC-11892-1] c35 N76-15433

Atomic standard with variable storage volume  
[NASA-CASE-GSC-11895-1] c35 N76-15436

Method and apparatus for splitting a beam of energy  
[NASA-CASE-GSC-12083-1] c36 N76-15451

Pseudo noise code and data transmission method and apparatus  
[NASA-CASE-GSC-12017-1] c32 N76-16302

High voltage distributor  
[NASA-CASE-GSC-11849-1] c33 N76-16332

Moving particle composition analyzer  
[NASA-CASE-GSC-11889-1] c35 N76-16393

Method and apparatus for controlling the contrast of a photographic transparency  
[NASA-CASE-GSC-11989-1] c35 N76-16395

A 2 degree/90 degree laboratory scattering photometer  
[NASA-CASE-GSC-12088-1] c35 N76-17369

A length controlled stabilized mode-lock Nd:YAG laser  
[NASA-CASE-GSC-11571-1] c36 N76-17384

Variable beamwidth antenna  
[NASA-CASE-GSC-11862-1] c32 N76-18295

Automatic character skew and spacing checking network  
[NASA-CASE-GSC-11925-1] c33 N76-18353

Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c37 N76-18459

Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-2] c60 N76-18803

Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-3] c60 N76-18804

Apparatus for simulating optical transmission links  
[NASA-CASE-GSC-11877-1] c37 N76-18913

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c24 N76-19234

Automatic transponder  
[NASA-CASE-GSC-12075-1] c32 N76-19318

Camera arrangement  
[NASA-CASE-GSC-12032-2] c35 N76-19408

Wideband heterodyne receiver for a laser communication system  
[NASA-CASE-GSC-12053-1] c36 N76-20466

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Coupling device  
[NASA-CASE-XMS-07846-1] c09 N69-21927

Flow test device  
[NASA-CASE-XMS-04917] c14 N69-24257

Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c31 N69-27499

System for monitoring signal amplitude ranges  
[NASA-CASE-XMS-04061-1] c09 N69-39885

Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c09 N69-39986

System for improving signal-to-noise ratio of a communication signal Patent Application

[NASA-CASE-MSC-12259-1] c07 N70-12616

Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c15 N70-22192

Heat shield Patent  
[NASA-CASE-XMS-00486] c33 N70-33344

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[NASA-CASE-XMS-00863] c05 N70-34857

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[NASA-CASE-XMS-01240] c05 N70-35152

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[NASA-CASE-XMS-00259] c18 N70-36400

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[NASA-CASE-XMS-00864] c05 N70-36493

Resuscitation apparatus Patent  
[NASA-CASE-XMS-01115] c05 N70-39922

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[NASA-CASE-XMS-00893] c07 N70-40063

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[NASA-CASE-XMS-01546] c14 N70-40233

Liquid-gas separator for zero gravity environment Patent  
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Dielectric loaded aperture antenna [NASA-CASE-LAR-11084-1]	c09 N73-12216	Technique for extending the frequency range of digital dividers [NASA-CASE-LAR-10730-1]	c10 N74-10223
Lift balancing device [NASA-CASE-LAR-10348-1]	c11 N73-12264	Fluid pressure amplifier and system [NASA-CASE-LAR-10868-1]	c09 N74-11050
Air removal device [NASA-CASE-XLA-8914]	c15 N73-12492	Method of making pressure tight seal for super alloy [NASA-CASE-LAR-10170-1]	c15 N74-11301
Nondestructive spot test method for titanium and titanium alloys [NASA-CASE-LAR-10539-1]	c17 N73-12547	Adjustable frequency response microphone [NASA-CASE-LAR-11170-1]	c07 N74-12843
Active air cushion control system minimizing vertical cushion response [NASA-CASE-LAR-10531-1]	c02 N73-13023	System for calibrating pressure transducer [NASA-CASE-LAR-10910-1]	c14 N74-13132
Logical function generator [NASA-CASE-XLA-05099]	c09 N73-13209	Molding process for imidazopyrrolone polymers [NASA-CASE-LAR-10547-1]	c15 N74-13177
Ferry system [NASA-CASE-LAR-10574-1]	c11 N73-13257	Lyophilized spore dispenser [NASA-CASE-LAR-10544-1]	c15 N74-13178
Flow velocity and directional instrument [NASA-CASE-LAR-10855-1]	c14 N73-13415	Transmitting and reflecting diffuser [NASA-CASE-LAR-10385-2]	c23 N74-13436
Vortex breech high pressure gas generator [NASA-CASE-LAR-10549-1]	c31 N73-13898	Evacuated displacement compression molding [NASA-CASE-LAR-10782-1]	c15 N74-14133
Structural panel [NASA-CASE-LAR-11052-1]	c32 N73-13929	Modification of one man life raft [NASA-CASE-LAR-10241-1]	c05 N74-14845
Method of detecting oxygen in a gas [NASA-CASE-LAR-10668-1]	c06 N73-16106	Attitude sensor [NASA-CASE-LAR-10586-1]	c14 N74-15089
Combustion detector [NASA-CASE-LAR-10739-1]	c14 N73-16484	Mossbauer spectrometer radiation detector [NASA-CASE-LAR-11155-1]	c14 N74-15091
Laser communication system for controlling several functions at a location remote to the laser [NASA-CASE-LAR-10311-1]	c16 N73-16536	In situ transfer standard for ultrahigh vacuum gage calibration [NASA-CASE-LAR-10862-1]	c14 N74-15092
Apparatus for photographing meteors [NASA-CASE-LAR-10226-1]	c14 N73-19419	Dual measurement ablation sensor [NASA-CASE-LAR-10105-1]	c33 N74-15652
Zero gravity liquid mixer [NASA-CASE-LAR-10195-1]	c15 N73-19458	Ejectable underwater sound source recovery assembly [NASA-CASE-LAR-10595-1]	c15 N74-16135
Cascade plug nozzle [NASA-CASE-LAR-10951-1]	c28 N73-19819	Wind tunnel model and method [NASA-CASE-LAR-10812-1]	c11 N74-17955
Wing upper surface flap [NASA-CASE-LAR-11140-1]	c02 N73-20008	High field CdS detector for infrared radiation [NASA-CASE-LAR-11027-1]	c14 N74-18088
Rate data encoder [NASA-CASE-LAR-10128-1]	c08 N73-20217	Method of fabricating an article with cavities [NASA-CASE-LAR-10318-1]	c14 N74-18089
Function generator for synthesizing complex vibration mode patterns [NASA-CASE-LAR-10310-1]	c10 N73-20253	Apparatus for remote handling of materials [NASA-CASE-LAR-10634-1]	c15 N74-18123
Infrared horizon locator [NASA-CASE-LAR-10726-1]	c14 N73-20475	Method for compression molding of thermosetting plastics utilizing a temperature gradient across the plastic to cure the article [NASA-CASE-LAR-10489-1]	c15 N74-18124
Electrical resistance spot welding and brazing techniques for metal bonding [NASA-CASE-LAR-11072-1]	c15 N73-20535	Method for determining thermo-physical properties of specimens [NASA-CASE-LAR-11053-1]	c33 N74-18551
Light intensity strain analysis [NASA-CASE-LAR-10765-1]	c32 N73-20740	Anti-buckling fatigue test assembly [NASA-CASE-LAR-10426-1]	c32 N74-19528
Anti-meteoroid device [NASA-CASE-LAR-10788-1]	c31 N73-20880	Aromatic polyimide preparation [NASA-CASE-LAR-11372-1]	c06 N74-19772
Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds [NASA-CASE-LAR-10578-1]	c12 N73-25262	Recording apparatus [NASA-CASE-LAR-11353-1]	c14 N74-20020
Cable restraint [NASA-CASE-LAR-10129-1]	c15 N73-25512	Reefing system [NASA-CASE-LAR-10129-2]	c15 N74-20063
Quiet jet transport aircraft [NASA-CASE-LAR-11087-1]	c02 N73-26008	A synchronous binary array divider [NASA-CASE-ERC-10180-1]	c08 N74-20836
Electronic strain-level counter [NASA-CASE-LAR-10756-1]	c32 N73-26910	Orbital and entry tracking accessory for globes [NASA-CASE-LAR-10626-1]	c14 N74-21015
Nondestructive spot test method for magnesium and magnesium alloys [NASA-CASE-LAR-10953-1]	c17 N73-27446	Digital controller for a Baum folding machine [NASA-CASE-LAR-10688-1]	c15 N74-21056
Ablation article and method [NASA-CASE-LAR-10439-1]	c33 N73-27796	Totally confined explosive welding [NASA-CASE-LAR-10941-1]	c15 N74-21057
Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds [NASA-CASE-LAR-10612-1]	c12 N73-28144	Method of fabricating an object with a thin wall having a precisely shaped slit [NASA-CASE-LAR-10409-1]	c15 N74-21059
Apparatus for aiding a pilot in avoiding a midair collision between aircraft [NASA-CASE-LAR-10717-1]	c21 N73-30641	Deployable pressurized cell structure for a micrometeoroid detector [NASA-CASE-LAR-10295-1]	c15 N74-21062
Dual cycle aircraft turbine engine [NASA-CASE-LAR-11310-1]	c28 N73-31699	Means for accommodating large overstrain in lead wires [NASA-CASE-LAR-10168-1]	c09 N74-22865
Electro-mechanical sine/cosine generator [NASA-CASE-LAR-11389-1]	c09 N73-32121	Bonded joint and method [NASA-CASE-LAR-10900-1]	c15 N74-23064
Exposure interlock for oscilloscope cameras [NASA-CASE-LAR-10319-1]	c14 N73-32322	Light shield and cooling apparatus [NASA-CASE-LAR-10089-1]	c15 N74-23066
Meteoroid detector [NASA-CASE-LAR-10483-1]	c14 N73-32327	Technique for bonding [NASA-CASE-LAR-10073-1]	c32 N74-23449
Totally confined explosive welding [NASA-CASE-LAR-10941-2]	c15 N73-32371	Wingtip vortex dissipator for aircraft [NASA-CASE-LAR-11645-1]	c02 N74-26456
Transmitting and reflecting diffuser [NASA-CASE-LAR-10385-3]	c23 N73-32538	Method of laminating structural members [NASA-CASE-XLA-11028-1]	c18 N74-27035
Lightweight, variable solidity knitted parachute fabric [NASA-CASE-LAR-10776-1]	c02 N74-10034	Rocket having barium release system to create ion clouds in the upper atmosphere [NASA-CASE-LAR-10670-2]	c31 N74-27360
		Apparatus for inserting and removing specimens from high temperature vacuum furnaces	

[NASA-CASE-LAR-10841-1]	c15 N74-27900	[NASA-CASE-LAR-11144-1]	c25 N75-26043
Grinding arrangement for ball nose milling cutters		Resonant waveguide stark cell	
[NASA-CASE-LAR-10450-1]	c15 N74-27905	[NASA-CASE-LAR-11352-1]	c33 N75-26245
Method of repairing discontinuity in fiberglass structures		Fluid control apparatus and method	
[NASA-CASE-LAR-10416-1]	c18 N74-30001	[NASA-CASE-LAR-11110-1]	c34 N75-26282
Real time liquid crystal image converter		Electrolytic cell structure	
[NASA-CASE-LAR-11206-1]	c23 N74-30118	[NASA-CASE-LAR-11042-1]	c33 N75-27252
Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft		Rotating joint signal coupler	
[NASA-CASE-LAR-10753-1]	c02 N74-30421	[NASA-CASE-LAR-11264-1]	c33 N75-27261
Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot		Automatic microbial transfer device	
[NASA-CASE-LAR-10550-1]	c11 N74-30597	[NASA-CASE-LAR-11354-1]	c35 N75-27330
Centrifugal lyophobic separator		Instrumentation for measuring aircraft noise and sonic boom	
[NASA-CASE-LAR-10194-1]	c12 N74-30608	[NASA-CASE-LAR-11476-1]	c35 N75-27334
Variably positioned guide vanes for aerodynamic choking		A method of preparing aromatic polyimides having uniquely low softening temperatures	
[NASA-CASE-LAR-10642-1]	c28 N74-31270	[NASA-CASE-LAR-11828-1]	c23 N75-29181
Noise suppressor		Polyimide adhesives	
[NASA-CASE-LAR-11141-1]	c02 N74-32418	[NASA-CASE-LAR-11397-1]	c27 N75-29263
Measuring probe position recorder		Particulate and solar radiation stable coating for spacecraft	
[NASA-CASE-LAR-10806-1]	c14 N74-32877	[NASA-CASE-LAR-10805-2]	c37 N75-29431
Stagnation pressure probe		Bonding method in the manufacture of continuous regression rate sensor devices	
[NASA-CASE-LAR-11139-1]	c14 N74-32878	[NASA-CASE-LAR-10337-1]	c24 N75-30260
Molding apparatus		Binocular attachment	
[NASA-CASE-LAR-10489-2]	c15 N74-32920	[NASA-CASE-LAR-11782-1]	c35 N75-30516
Remote fire stack igniter		Varying density composite structure	
[NASA-CASE-MPS-21675-1]	c33 N74-33378	[NASA-CASE-LAR-11181-1]	c39 N75-31479
Open tube guideway for high speed air cushioned vehicles		Meteoroid impact position locator aid for manned space station	
[NASA-CASE-LAR-10256-1]	c11 N74-34672	[NASA-CASE-LAR-10629-1]	c35 N75-33367
Fast scan control for deflection type mass spectrometers		Measurement of gas production of microorganisms	
[NASA-CASE-LAR-11428-1]	c14 N74-34857	[NASA-CASE-LAR-11326-1]	c35 N75-33368
Miniature hydraulic actuator		Self-supporting strain transducer	
[NASA-CASE-LAR-11522-1]	c15 N74-34881	[NASA-CASE-LAR-11263-1]	c35 N75-33369
Apparatus for microbiological sampling		Magnetometer	
[NASA-CASE-LAR-11069-1]	c35 N75-12272	[NASA-CASE-LAR-11617-1]	c35 N75-33370
Method of making an explosively welded scarf joint		Phase modulator	
[NASA-CASE-LAR-11211-1]	c37 N75-12326	[NASA-CASE-LAR-11607-1]	c32 N76-10356
Determining particle density using known material Hugoniot curves		Smokestack mounted airfoil	
[NASA-CASE-LAR-11059-1]	c76 N75-12810	[NASA-CASE-LAR-11669-1]	c34 N76-13419
Method for making conductors for ferrite memory arrays		Amplifying ribbon extensometer	
[NASA-CASE-LAR-10994-1]	c24 N75-13032	[NASA-CASE-LAR-11825-1]	c35 N76-13460
Growth of gallium nitride crystals		Precision alignment apparatus for cutting a workpiece	
[NASA-CASE-LAR-11302-1]	c25 N75-13054	[NASA-CASE-LAR-11658-1]	c37 N76-13494
Evacuated, displacement compression mold		Automated single-slide staining device	
[NASA-CASE-LAR-10782-2]	c31 N75-13111	[NASA-CASE-LAR-11649-1]	c51 N76-13725
High temperature strain gage calibration fixture		Annular momentum control device used for stabilization of space vehicles and the like	
[NASA-CASE-LAR-11500-1]	c35 N75-13227	[NASA-CASE-LAR-11051-1]	c15 N76-14158
Servo valve		Multichannel logarithmic RF level detector	
[NASA-CASE-LAR-11643-1]	c37 N75-13268	[NASA-CASE-LAR-11021-1]	c32 N76-14321
Automatic inoculating apparatus		Turnstile and flared cone UHF antenna	
[NASA-CASE-LAR-11074-1]	c51 N75-13502	[NASA-CASE-LAR-10970-1]	c33 N76-14372
Automatic focus control for facsimile cameras		Static pressure probe	
[NASA-CASE-LAR-11213-1]	c35 N75-15014	[NASA-CASE-LAR-11552-1]	c35 N76-14429
Kinesthetic control simulator		Horn antenna having V-shaped corrugated slots	
[NASA-CASE-LAR-10276-1]	c09 N75-15662	[NASA-CASE-LAR-11112-1]	c32 N76-15330
Method for detecting pollutants		Ultrasonic calibration device	
[NASA-CASE-LAR-11405-1]	c35 N75-15938	[NASA-CASE-LAR-11435-1]	c35 N76-15432
Variable dihedral shuttle orbiter		Deploy/release system	
[NASA-CASE-LAR-10706-1]	c18 N75-16613	[NASA-CASE-LAR-11575-1]	c02 N76-16014
Connector		Clock setter	
[NASA-CASE-LAR-11709-1]	c33 N75-16747	[NASA-CASE-LAR-11458-1]	c35 N76-16392
Electrostatic measurement system		Miniature biaxial strain transducer	
[NASA-CASE-MPS-22129-1]	c33 N75-18477	[NASA-CASE-LAR-11648]	c35 N76-16396
Automatic liquid inventory collecting and dispensing unit		Heat exchanger system and method	
[NASA-CASE-LAR-11071-1]	c35 N75-19611	[NASA-CASE-LAR-10799-2]	c34 N76-17317
Vacuum leak detector		Stack plume visualization system	
[NASA-CASE-LAR-11237-1]	c35 N75-19612	[NASA-CASE-LAR-11675-1]	c45 N76-17656
Spectrometer integrated with a facsimile camera		Cascade plug nozzle	
[NASA-CASE-LAR-11207-1]	c35 N75-19613	[NASA-CASE-LAR-11674-1]	c07 N76-18117
Instrumentation for measurement of aircraft noise and sonic boom		Magnetic suspension and pointing system	
[NASA-CASE-LAR-11173-1]	c35 N75-19614	[NASA-CASE-LAR-11889-1]	c19 N76-18227
Detector absorptivity measuring method and apparatus		Method of locating persons in distress	
[NASA-CASE-LAR-10907-1]	c35 N75-19629	[NASA-CASE-LAR-11390-1]	c32 N76-18315
Laser head for simultaneous optical pumping of several dye lasers		Exhaust flow deflector	
[NASA-CASE-LAR-11341-1]	c36 N75-19655	[NASA-CASE-LAR-11570-1]	c34 N76-18364
High lift aircraft		Method and apparatus for tensile testing of metal foil	
[NASA-CASE-LAR-11252-1]	c05 N75-25914	[NASA-CASE-LAR-10208-1]	c35 N76-18400
Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements		Apparatus for determining thermophysical properties of test specimens	
		[NASA-CASE-LAR-11883-1]	c35 N76-18415
		Method and apparatus for fluffing, separating, and cleaning fibers	
		[NASA-CASE-LAR-11224-1]	c37 N76-18456

Transonic and supersonic aircraft wherein the problems of roll control at high angles of attack are minimized  
[NASA-CASE-LAR-11868-1] c08 N76-19159

Solar hydrogen generator  
[NASA-CASE-LAR-11361-1] c44 N76-19564

Therapeutic hand exerciser  
[NASA-CASE-LAR-11667-1] c52 N76-19785

Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c04 N76-20114

Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c37 N76-21554

Manufacture of glass-to-metal seals wherein the cleanliness of the process is enhanced and the leak resistance of the resulting seal is maximized  
[NASA-CASE-LAR-11563-1] c37 N76-21558

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Foil seal  
[NASA-CASE-XLE-05430] c15 N69-21362

Fluid jet amplifier  
[NASA-CASE-XLE-03512] c12 N69-21466

Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c09 N69-21542

Thin window, drifted silicon, charged particle detector  
[NASA-CASE-XLE-10529] c14 N69-23191

Probes having ring and primary sensor at same potential to prevent collection of stray wall currents in ionized gases  
[NASA-CASE-XLE-00690] c25 N69-39884

Ion thruster cathode  
[NASA-CASE-XLE-07087] c06 N69-39889

Superconducting alternator  
[NASA-CASE-XLE-02824] c03 N69-39890

Triode thermionic energy converter  
[NASA-CASE-XLE-01015] c03 N69-39898

Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c03 N69-39983

Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c12 N69-39988

Transpiration cooled turbine blade manufactured from wires Patent  
[NASA-CASE-XLE-00020] c15 N70-33226

Rocket propellant injector Patent  
[NASA-CASE-XLE-00103] c28 N70-33241

Modification and improvements to cooled blades Patent  
[NASA-CASE-XLE-00092] c15 N70-33264

Colloid propulsion method and apparatus Patent  
[NASA-CASE-XLE-00817] c28 N70-33265

High-vacuum condenser tank for ion rocket tests Patent  
[NASA-CASE-XLE-00168] c11 N70-33278

High temperature nickel-base alloy Patent  
[NASA-CASE-XLE-00151] c17 N70-33283

Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c28 N70-33284

Reinforced metallic composites Patent  
[NASA-CASE-XLE-02428] c17 N70-33288

Process for applying a protective coating for salt bath brazing Patent  
[NASA-CASE-XLE-00046] c15 N70-33311

Wire grid forming apparatus Patent  
[NASA-CASE-XLE-00023] c15 N70-33330

Electro-thermal rocket Patent  
[NASA-CASE-XLE-00267] c28 N70-33356

External liquid-spray cooling of turbine blades Patent  
[NASA-CASE-XLE-00037] c28 N70-33372

Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c28 N70-33375

Flexible seal for valves Patent  
[NASA-CASE-XLE-00101] c15 N70-33376

Apparatus for making a metal slurry product Patent  
[NASA-CASE-XLE-00010] c15 N70-33382

Energy conversion apparatus Patent  
[NASA-CASE-XLE-00212] c03 N70-34134

Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c14 N70-34156

Electrothermal rockets having improved heat exchangers Patent  
[NASA-CASE-XLE-01783] c28 N70-34175

Venting vapor apparatus Patent  
[NASA-CASE-XLE-00288] c15 N70-34247

Electrostatic propulsion system with a direct nuclear electrogenerator Patent  
[NASA-CASE-XLE-00818] c22 N70-34248

Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c28 N70-34294

Nuclear reactor control rod assembly with improved driving mechanism Patent  
[NASA-CASE-XLE-00298] c22 N70-34501

High temperature heat source Patent  
[NASA-CASE-XLE-00490] c33 N70-34545

Gaseous nuclear rocket Patent  
[NASA-CASE-XLE-00321] c22 N70-34572

Simulated fuel assembly Patent  
[NASA-CASE-XLE-00724] c14 N70-34669

Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c28 N70-34788

Radiant heater having formed filaments Patent  
[NASA-CASE-XLE-00387] c33 N70-34812

Optical torqueometer Patent  
[NASA-CASE-XLE-00503] c14 N70-34818

Electric propulsion engine test chamber Patent  
[NASA-CASE-XLE-00252] c11 N70-34844

Conical valve plug Patent  
[NASA-CASE-XLE-00715] c15 N70-34859

Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c28 N70-34860

Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c15 N70-34861

High temperature testing apparatus Patent  
[NASA-CASE-XLE-00335] c14 N70-35368

Ion thruster cathode Patent Application  
[NASA-CASE-XLE-10814-1] c28 N70-35422

Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c15 N70-36411

Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00170] c15 N70-36412

Fluid coupling Patent  
[NASA-CASE-XLE-00397] c15 N70-36492

Injector-valve device Patent  
[NASA-CASE-XLE-00303] c15 N70-36535

Nickel-base alloy Patent  
[NASA-CASE-XLE-00283] c17 N70-36616

Apparatus having coaxial capacitor structure for measuring fluid density Patent  
[NASA-CASE-XLE-00143] c14 N70-36618

Rocket thrust chamber Patent  
[NASA-CASE-XLE-00145] c28 N70-36806

Solid state power mapping instrument Patent  
[NASA-CASE-XLE-00301] c14 N70-36808

Ion rocket Patent  
[NASA-CASE-XLE-00376] c28 N70-37245

Annular supersonic decelerator or drogue Patent  
[NASA-CASE-XLE-00222] c02 N70-37939

Rocket engine Patent  
[NASA-CASE-XLE-00342] c28 N70-37980

Variable sweep aircraft wing Patent  
[NASA-CASE-XLE-00350] c02 N70-38011

Apparatus for transferring cryogenic liquids Patent  
[NASA-CASE-XLE-00345] c15 N70-38020

Method of producing porous tungsten ionizers for ion rocket engines Patent  
[NASA-CASE-XLE-00455] c28 N70-38197

Method of making fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-00231] c17 N70-38198

Rocket engine injector Patent  
[NASA-CASE-XLE-00111] c28 N70-38199

Reinforced metallic composites Patent  
[NASA-CASE-XLE-00228] c17 N70-38490

Rocket motor system Patent  
[NASA-CASE-XLE-00323] c28 N70-38505

Particle beam measurement apparatus using beam kinetic energy to change the heat sensitive resistance of the detection probe Patent  
[NASA-CASE-XLE-00243] c14 N70-38602

Penshape exhaust nozzle for supersonic engine Patent  
[NASA-CASE-XLE-00057] c28 N70-38711

Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00085] c28 N70-39895

Gas lubricant compositions Patent  
[NASA-CASE-XLE-00353] c18 N70-39897

Telescoping-spike supersonic inlet for aircraft engines Patent  
[NASA-CASE-XLE-00005] c28 N70-39899



High temperature spark plug Patent		High temperature cobalt-base alloy Patent	
[NASA-CASE-XLE-00660]	c28 N70-39925	[NASA-CASE-XLE-02991]	c17 N71-16025
Low viscosity magnetic fluid obtained by the colloidal suspension of magnetic particles Patent		Nickel-base alloy containing Mo-W-Al-Cr-Ta-Zr-C-Nb-B Patent	
[NASA-CASE-XLE-01512]	c12 N70-40124	[NASA-CASE-XLE-02082]	c17 N71-16026
Apparatus for absorbing and measuring power Patent		Method of improving the reliability of a rolling element system Patent	
[NASA-CASE-XLE-00720]	c14 N70-40201	[NASA-CASE-XLE-02999]	c15 N71-16052
Device for directionally controlling electromagnetic radiation Patent		Process of casting heavy slips Patent	
[NASA-CASE-XLE-01716]	c09 N70-40234	[NASA-CASE-XLE-00106]	c15 N71-16076
Method for continuous variation of propellant flow and thrust in propulsive devices Patent		Boiler for generating high quality vapor Patent	
[NASA-CASE-XLE-00177]	c28 N70-40367	[NASA-CASE-XLE-00785]	c33 N71-16104
Apparatus for increasing ion engine beam density Patent		Method of making self lubricating fluoride-metal composite materials Patent	
[NASA-CASE-XLE-00519]	c28 N70-41576	[NASA-CASE-XLE-08511-2]	c18 N71-16105
Foldable conduit Patent		Thrust and direction control apparatus Patent	
[NASA-CASE-XLE-00620]	c32 N70-41579	[NASA-CASE-XLE-03583]	c31 N71-17629
Liquid storage tank venting device for zero gravity environment Patent		Linear magnetic brake with two windings Patent	
[NASA-CASE-XLE-01449]	c15 N70-41646	[NASA-CASE-XLE-05079]	c15 N71-17652
Method of making a regeneratively cooled combustion chamber Patent		Method of lubricating rolling element bearings Patent	
[NASA-CASE-XLE-00150]	c28 N70-41818	[NASA-CASE-XLE-09527]	c15 N71-17688
Instrument for the quantitative measurement of radiation at multiple wave lengths Patent		Hot wire liquid level detector for cryogenic fluids Patent	
[NASA-CASE-XLE-00011]	c14 N70-41946	[NASA-CASE-XLE-00454]	c23 N71-17802
Small rocket engine Patent		Pulsed differential comparator circuit Patent	
[NASA-CASE-XLE-00685]	c28 N70-41992	[NASA-CASE-XLE-03804]	c10 N71-19471
Apparatus for positioning and loading a test specimen Patent		Foil seal Patent	
[NASA-CASE-XLE-01300]	c15 N70-41993	[NASA-CASE-XLE-05130-2]	c15 N71-19570
Liquid flow sight assembly Patent		Generator for a space power system Patent	
[NASA-CASE-XLE-02998]	c14 N70-42074	[NASA-CASE-XLE-04250]	c09 N71-20446
Inductive liquid level detection system Patent		Method of making electrical contact on silicon solar cell and resultant product Patent	
[NASA-CASE-XLE-01609]	c14 N71-10500	[NASA-CASE-XLE-04787]	c03 N71-20492
Method of forming thin window drifted silicon charged particle detector Patent		Small plasma probe Patent	
[NASA-CASE-XLE-00808]	c24 N71-10560	[NASA-CASE-XLE-02578]	c25 N71-20747
Electrostatic thruster with improved insulators Patent		Combined electrolysis device and fuel cell and method of operation Patent	
[NASA-CASE-XLE-01902]	c28 N71-10574	[NASA-CASE-XLE-01645]	c03 N71-20904
Thin-walled pressure vessel Patent		Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent	
[NASA-CASE-XLE-04677]	c15 N71-10577	[NASA-CASE-XLE-00787]	c14 N71-21090
Method of making a silicon semiconductor device Patent		Control of transverse instability in rocket combustors Patent	
[NASA-CASE-XLE-02792]	c26 N71-10607	[NASA-CASE-XLE-04603]	c33 N71-21507
Metallic film diffusion for boundary lubrication Patent		High voltage divider system Patent	
[NASA-CASE-XLE-01765]	c18 N71-10772	[NASA-CASE-XLE-02008]	c09 N71-21583
Molecular beam velocity selector Patent		Plasma device feed system Patent	
[NASA-CASE-XLE-01533]	c11 N71-10777	[NASA-CASE-XLE-02902]	c25 N71-21694
Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent		Burning rate control of solid propellants Patent	
[NASA-CASE-XLE-01246]	c14 N71-10797	[NASA-CASE-XLE-03494]	c27 N71-21819
Capacitor and method of making same Patent		Protective device for machine and metalworking tools Patent	
[NASA-CASE-XLE-10364-1]	c09 N71-13522	[NASA-CASE-XLE-01092]	c15 N71-22797
Capillary radiator Patent		Cryogenic insulation system Patent	
[NASA-CASE-XLE-03307]	c33 N71-14035	[NASA-CASE-XLE-04222]	c23 N71-22881
Electrostatic ion engine having a permanent magnetic circuit Patent		Method for producing fiber reinforced metallic composites Patent	
[NASA-CASE-XLE-01124]	c28 N71-14043	[NASA-CASE-XLE-03925]	c18 N71-22894
Split welding chamber Patent		Thermal shock apparatus Patent	
[NASA-CASE-XLE-11531]	c15 N71-14932	[NASA-CASE-XLE-02024]	c14 N71-22964
Method and apparatus for making curved reflectors Patent		Arc electrode of graphite with ball tip Patent	
[NASA-CASE-XLE-08917]	c15 N71-15597	[NASA-CASE-XLE-04788]	c09 N71-22987
Method of making a diffusion bonded refractory coating Patent		Gas purged dry box glove Patent	
[NASA-CASE-XLE-01604-2]	c15 N71-15610	[NASA-CASE-XLE-02531]	c05 N71-23080
Black-body furnace Patent		Automatic recording McLeod gauge Patent	
[NASA-CASE-XLE-01399]	c33 N71-15625	[NASA-CASE-XLE-03280]	c14 N71-23093
Method of igniting solid propellants Patent		Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent	
[NASA-CASE-XLE-01988]	c27 N71-15634	[NASA-CASE-XLE-04501]	c09 N71-23190
Fluid dispensing apparatus and method Patent		High temperature ferromagnetic cobalt-base alloy Patent	
[NASA-CASE-XLE-01182]	c27 N71-15635	[NASA-CASE-XLE-03629]	c17 N71-23248
Automatically deploying nozzle exit cone extension Patent		Induction furnace with perforated tungsten foil shielding Patent	
[NASA-CASE-XLE-01640]	c31 N71-15637	[NASA-CASE-XLE-04026]	c14 N71-23267
High temperature cobalt-base alloy Patent		Gd or Sm doped silicon semiconductor composition Patent	
[NASA-CASE-XLE-00726]	c17 N71-15644	[NASA-CASE-XLE-10715]	c26 N71-23292
Method of making a rocket motor casing Patent		Protection of serially connected solar cells against open circuits by the use of shunting diode Patent	
[NASA-CASE-XLE-00409]	c28 N71-15658	[NASA-CASE-XLE-04535]	c03 N71-23354
Rocket motor casing Patent		Superconducting alternator Patent	
[NASA-CASE-XLE-05689]	c28 N71-15659	[NASA-CASE-XLE-02823]	c09 N71-23443
Electrostatic ion rocket engine Patent		Silicon solar cell with cover glass bonded to cell by metal pattern Patent	
[NASA-CASE-XLE-02066]	c28 N71-15661		

[NASA-CASE-XLE-08569] c03 N71-23449  
 Analytical test apparatus and method for  
 determining oxide content of alkali metal Patent  
 [NASA-CASE-XLE-01997] c06 N71-23527  
 Thermionic converter with current augmented by  
 self induced magnetic field Patent  
 [NASA-CASE-XLE-01903] c22 N71-23599  
 Semiconductor material and method of making same  
 Patent  
 [NASA-CASE-XLE-02798] c26 N71-23654  
 Insulation system Patent  
 [NASA-CASE-XLE-02647] c18 N71-23658  
 Self-lubricating fluoride metal composite  
 materials Patent  
 [NASA-CASE-XLE-08511] c18 N71-23710  
 Alloys for bearings Patent  
 [NASA-CASE-XLE-05033] c15 N71-23810  
 Extrusion die for refractory metals Patent  
 [NASA-CASE-XLE-06773] c15 N71-23817  
 Combustion chamber Patent  
 [NASA-CASE-XLE-04857] c28 N71-23968  
 Metallic film diffusion for boundary lubrication  
 Patent  
 [NASA-CASE-XLE-10337] c15 N71-24046  
 Process for producing dispersion strengthened  
 nickel with aluminum Patent  
 [NASA-CASE-XLE-06969] c17 N71-24142  
 Thermal radiation shielding Patent  
 [NASA-CASE-XLE-03432] c33 N71-24145  
 Method of attaching a cover glass to a silicon  
 solar cell Patent  
 [NASA-CASE-XLE-08569-2] c03 N71-24681  
 Rocket engine injector Patent  
 [NASA-CASE-XLE-03157] c28 N71-24736  
 Multialarm summary alarm Patent  
 [NASA-CASE-XLE-03061-1] c10 N71-24798  
 Apparatus for making curved reflectors Patent  
 [NASA-CASE-XLE-08917-2] c15 N71-24836  
 Flow angle sensor and read out system Patent  
 [NASA-CASE-XLE-04503] c14 N71-24864  
 Shock tube powder dispersing apparatus Patent  
 [NASA-CASE-XLE-04946] c17 N71-24911  
 Pneumatic oscillator Patent  
 [NASA-CASE-XLE-10345-1] c10 N71-25899  
 Heat activated cell with alkali anode and alkali  
 salt electrolyte Patent  
 [NASA-CASE-XLE-11358] c03 N71-26084  
 Method of producing refractory composites  
 containing tantalum carbide, hafnium carbide,  
 and hafnium boride Patent  
 [NASA-CASE-XLE-03940] c18 N71-26153  
 Ion beam deflector Patent  
 [NASA-CASE-XLE-10689-1] c28 N71-26173  
 Rolling element bearings Patent  
 [NASA-CASE-XLE-09527-2] c15 N71-26189  
 Ion thruster accelerator system Patent  
 [NASA-CASE-XLE-10106-1] c28 N71-26642  
 Propellant feed isolator Patent  
 [NASA-CASE-XLE-10210-1] c28 N71-26781  
 Heat activated cell Patent  
 [NASA-CASE-XLE-11359] c03 N71-28579  
 Process for glass coating an ion accelerator  
 grid Patent  
 [NASA-CASE-XLE-10278-1] c15 N71-28582  
 Fluid jet amplifier Patent  
 [NASA-CASE-XLE-09341] c12 N71-28741  
 Gas core nuclear reactor Patent  
 [NASA-CASE-XLE-10250-1] c22 N71-28759  
 Gas turbine combustor Patent  
 [NASA-CASE-XLE-10286-1] c28 N71-28915  
 Cyclic switch Patent  
 [NASA-CASE-XLE-10155-1] c09 N71-29035  
 Temperature reducing coating for metals subject  
 to flame exposure Patent  
 [NASA-CASE-XLE-00035] c33 N71-29151  
 Liquid spray cooling method Patent  
 [NASA-CASE-XLE-00027] c33 N71-29152  
 Turbo-machine blade vibration damper Patent  
 [NASA-CASE-XLE-00155] c28 N71-29154  
 Corrosion resistant beryllium Patent  
 [NASA-CASE-XLE-10327] c17 N71-33408  
 Integrated thermoelectric generator/space  
 antenna combination  
 [NASA-CASE-XLE-09521] c09 N72-12136  
 Sensing probe  
 [NASA-CASE-XLE-10281-1] c14 N72-17327  
 Method of making emf cell  
 [NASA-CASE-XLE-11359-2] c03 N72-20034

Gaseous control system for nuclear reactors  
 [NASA-CASE-XLE-04599] c22 N72-20597  
 Switching regulator  
 [NASA-CASE-XLE-11005-1] c09 N72-21243  
 Saturation current protection apparatus for  
 saturable core transformers  
 [NASA-CASE-ERC-10075-2] c09 N72-22196  
 Pulse coupling circuit  
 [NASA-CASE-XLE-10433-1] c09 N72-22197  
 Solid state remote circuit selector switch  
 [NASA-CASE-XLE-10387] c09 N72-22201  
 Load-insensitive electrical device  
 [NASA-CASE-XLE-11046] c09 N72-22203  
 High speed rolling element bearing  
 [NASA-CASE-XLE-10856-1] c15 N72-22490  
 Production of metal powders  
 [NASA-CASE-XLE-06461] c17 N72-22530  
 Nickel base alloy  
 [NASA-CASE-XLE-10874-1] c17 N72-22535  
 Ion thruster magnetic field control  
 [NASA-CASE-XLE-10835-1] c28 N72-22771  
 Electrically conductive fluorocarbon polymer  
 [NASA-CASE-XLE-06774-2] c06 N72-25150  
 Analog signal to discrete time interval  
 Converter (ASDTIC)  
 [NASA-CASE-ERC-10048] c09 N72-25251  
 Controllable load insensitive power converters  
 [NASA-CASE-ERC-10268] c09 N72-25252  
 Angular velocity and acceleration measuring  
 apparatus  
 [NASA-CASE-ERC-10292] c14 N72-25410  
 Electrical insulating layer process  
 [NASA-CASE-XLE-10489-1] c15 N72-25447  
 Method for producing dispersion strengthened  
 alloys by converting metal to a halide,  
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 metal and sintering  
 [NASA-CASE-XLE-10450-1] c15 N72-25448  
 Selective nickel deposition  
 [NASA-CASE-XLE-10965-1] c15 N72-25452  
 Method of making fiber composites  
 [NASA-CASE-XLE-10424-2-2] c18 N72-25539  
 Electricity measurement devices employing liquid  
 crystalline materials  
 [NASA-CASE-ERC-10275] c26 N72-25680  
 Ablative system  
 [NASA-CASE-XLE-10359] c33 N72-25911  
 Inductance device with vacuum insulation  
 [NASA-CASE-XLE-10330-1] c09 N72-27226  
 Apparatus for sensing temperature  
 [NASA-CASE-XLE-05230] c14 N72-27410  
 Apparatus for producing metal powders  
 [NASA-CASE-XLE-06461-2] c17 N72-28535  
 Refractory metal base alloy composites  
 [NASA-CASE-XLE-03940-2] c17 N72-28536  
 Apparatus for producing high purity I-123  
 [NASA-CASE-XLE-10518-2] c24 N72-28714  
 Spiral groove seal  
 [NASA-CASE-XLE-10326-2] c15 N72-29488  
 Production of high purity I-123  
 [NASA-CASE-XLE-10518-1] c24 N72-33681  
 Electrostatic collector for charged particles  
 [NASA-CASE-XLE-11192-1] c09 N73-13208  
 Method of making apparatus for sensing temperature  
 [NASA-CASE-XLE-05230-2] c14 N73-13417  
 Method of forming superalloys  
 [NASA-CASE-XLE-10805-1] c15 N73-13465  
 Rocket thrust throttling system  
 [NASA-CASE-XLE-10374-1] c28 N73-13773  
 Gas turbine engine fuel control  
 [NASA-CASE-XLE-11187-1] c28 N73-19793  
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 [NASA-CASE-XLE-11390-2] c24 N73-20763  
 Thermocouple tape  
 [NASA-CASE-XLE-11072-1] c14 N73-24472  
 Method and apparatus for sputtering utilizing an  
 apertured electrode and a pulsed substrate bias  
 [NASA-CASE-XLE-10920-1] c17 N73-24569  
 Magneto-plasma-dynamic arc thruster  
 [NASA-CASE-XLE-11180-1] c25 N73-25760  
 Ablative system  
 [NASA-CASE-XLE-10359-2] c33 N73-25952  
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 [NASA-CASE-ERC-10403-1] c10 N73-26228  
 Twisted multifilament superconductor  
 [NASA-CASE-XLE-11726-1] c26 N73-26752  
 Ophthalmic method and apparatus  
 [NASA-CASE-XLE-11669-1] c05 N73-27062

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Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids [NASA-CASE-LEW-11325-1]	c06 N73-27980	Glass-to-metal seals comprising relatively high expansion metals [NASA-CASE-LEW-10698-1]	c15 N74-21063
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Method and apparatus for measuring electromagnetic radiation [NASA-CASE-LEW-11159-1]	c14 N73-28488	Low level signal limiter [NASA-CASE-XLE-04791]	c14 N74-22096
Welding blades to rotors [NASA-CASE-LEW-10533-1]	c15 N73-28515	Load insensitive electrical device [NASA-CASE-XER-11046-2]	c09 N74-22864
An ion exchange nuclear reactor [NASA-CASE-LEW-11645-2]	c22 N73-28660	Reinforced structural plastics [NASA-CASE-LEW-10199-1]	c18 N74-23125
Low mass rolling element for bearings [NASA-CASE-LEW-11087-1]	c15 N73-30458	Jet exhaust noise suppressor [NASA-CASE-LEW-11286-1]	c02 N74-27490
Swirl can primary combustor [NASA-CASE-LEW-11326-1]	c23 N73-30665	High current electrical lead [NASA-CASE-LEW-10950-1]	c09 N74-27683
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		Drilled ball bearing with a one piece anti-tipping cage assembly [NASA-CASE-LEW-11925-1]	c37 N75-31446
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Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c35 N76-13454

Controlled separation combustor  
[NASA-CASE-LEW-11593-1] c20 N76-14190

Rocket chamber and method of making  
[NASA-CASE-LEW-11118-2] c20 N76-14191

Nickel base alloy  
[NASA-CASE-LEW-12270-1] c26 N76-14247

Shock position sensor for supersonic inlets  
[NASA-CASE-LEW-11915-1] c35 N76-14431

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[NASA-CASE-LEW-11694-2] c37 N76-14461

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[NASA-CASE-LEW-11330-1] c44 N76-14612

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[NASA-CASE-LEW-11496-1] c44 N76-14613

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[NASA-CASE-LEW-11938-1] c33 N76-15373

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[NASA-CASE-LEW-11072-2] c35 N76-15434

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[NASA-CASE-LEW-11076-4] c37 N76-15461

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[NASA-CASE-LEW-12159-1] c44 N76-15603

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[NASA-CASE-LEW-11179-1] c27 N76-16229

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[NASA-CASE-LEW-12095-1] c26 N76-17233

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[NASA-CASE-LEW-11158-1] c37 N76-19440

Flexible formulated plastic separators for alkaline batteries  
[NASA-CASE-LEW-12363-1] c44 N76-19552

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[NASA-CASE-LEW-12137-1] c20 N76-20215

Closed loop spray cooling apparatus  
[NASA-CASE-LEW-11981-1] c37 N76-20486

Counter pumping debris excluder and separator  
[NASA-CASE-LEW-11855-1] c37 N76-20487

Circumferential shaft seal  
[NASA-CASE-LEW-12119-1] c37 N76-20488

Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c20 N76-21276

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[NASA-CASE-XMF-03873] c06 N69-39733

Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c09 N70-20737

Angular measurement system Patent  
[NASA-CASE-XMF-00447] c14 N70-33179

Insulating structure Patent  
[NASA-CASE-XMF-00341] c15 N70-33323

Space vehicle electrical system Patent  
[NASA-CASE-XMF-00517] c03 N70-34157

Pivotal shock absorbing pad assembly Patent  
[NASA-CASE-XMF-03856] c31 N70-34159

Gimbaled, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c28 N70-34162

Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c31 N70-34176

Electrical discharge apparatus for forming Patent  
[NASA-CASE-XMF-00375] c15 N70-34249

Optical inspection apparatus Patent  
[NASA-CASE-XMF-00462] c14 N70-34298

Relay binary circuit Patent  
[NASA-CASE-XMF-00421] c09 N70-34502

Attitude and propellant flow control system and method Patent  
[NASA-CASE-XMF-00185] c21 N70-34539

Electrical connector for flat cables Patent  
[NASA-CASE-XMF-00324] c09 N70-34596

Externally pressurized fluid bearing Patent  
[NASA-CASE-XMF-00515] c15 N70-34664

Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c14 N70-34705

Seismic displacement transducer Patent  
[NASA-CASE-XMF-00479] c14 N70-34794

Electric arc welding Patent  
[NASA-CASE-XMF-00392] c15 N70-34814

Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c31 N70-36410

Printed cable connector Patent  
[NASA-CASE-XMF-00369] c09 N70-36494

Landing pad assembly for aerospace vehicles Patent  
[NASA-CASE-XMF-02853] c31 N70-36654

Electric arc driven wind tunnel Patent  
[NASA-CASE-XMF-00411] c11 N70-36913

Gravity device Patent  
[NASA-CASE-XMF-00424] c11 N70-38196

Injector for bipropellant rocket engines Patent  
[NASA-CASE-XMF-00148] c28 N70-38710

Electronic motor control system Patent  
[NASA-CASE-XMF-01129] c09 N70-38712

Slosh suppressing device and method Patent  
[NASA-CASE-XMF-00658] c12 N70-38997

Air bearing Patent  
[NASA-CASE-XMF-00339] c15 N70-39896

Instrument support with precise lateral adjustment Patent  
[NASA-CASE-XMF-00480] c14 N70-39898

Segmented back-up bar Patent  
[NASA-CASE-XMF-00640] c15 N70-39924

Collapsible loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c07 N70-40202

Flexible back-up bar Patent  
[NASA-CASE-XMF-00722] c15 N70-40204

Electro-optical alignment control system Patent  
[NASA-CASE-XMF-00908] c14 N70-40238

Missile launch release system Patent  
[NASA-CASE-XMF-03198] c30 N70-40353

Double-acting shock absorber Patent  
[NASA-CASE-XMF-01045] c15 N70-40354

Portable alignment tool Patent  
[NASA-CASE-XMF-01452] c15 N70-41371

Device for suppressing sound and heat produced by high-velocity exhaust jets Patent  
[NASA-CASE-XMF-01813] c28 N70-41582

Unfired-ceramic flame-resistant insulation and method of making the same Patent  
[NASA-CASE-XMF-01030] c18 N70-41583

Pulse counting circuit which simultaneously indicates the occurrence of the nth pulse Patent  
[NASA-CASE-XMF-00906] c09 N70-41655

Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c11 N70-41677

Locking device with rolling detents Patent  
[NASA-CASE-XMF-01371] c15 N70-41829

Tank construction for space vehicles Patent  
[NASA-CASE-XMF-01899] c31 N70-41948

Positive displacement flowmeter Patent  
[NASA-CASE-XMF-02822] c14 N70-41994

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.**  
**MANNED SPACECRAFT CENTER, CAPE CANAVERAL, FLA.**  
Electrode for biological recording  
[NASA-CASE-XMS-02872] c05 N69-21925

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.**  
**MANNED SPACECRAFT CENTER, LANGLEY STATION, VA.**  
Plural recorder system  
[NASA-CASE-XMS-06949] c09 N69-21467

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.**  
**MARSHALL SPACE FLIGHT CENTER, HUNTSVILLE, ALA.**  
Electrical feed-through connection for printed

Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c11 N71-10604

Fiber optic vibration transducer and analyzer Patent  
[NASA-CASE-XMF-02433] c14 N71-10616

Method and means for damping nutation in a satellite Patent  
[NASA-CASE-XMF-00442] c31 N71-10747

Heat pipe thermionic diode power system Patent  
[NASA-CASE-XMF-05843] c03 N71-11055

Synthesis of siloxane-containing epoxy polymers Patent  
[NASA-CASE-MFS-13994-1] c06 N71-11240

Bi-carrier demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c07 N71-11298

Harness assembly Patent  
[NASA-CASE-MFS-14671] c05 N71-12341

Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c08 N71-12504

Pulse amplitude and width detector Patent  
[NASA-CASE-XMF-06519] c09 N71-12519

Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c09 N71-13486

Hybrid holographic system using reflected and transmitted object beams simultaneously Patent  
[NASA-CASE-MFS-20074] c16 N71-15565

Reactance control system Patent  
[NASA-CASE-XMF-01598] c21 N71-15583

Apparatus for welding torch angle and seam tracking control Patent  
[NASA-CASE-XMF-03287] c15 N71-15607

Multiway vortex valve system Patent  
[NASA-CASE-XMF-04709] c15 N71-15609

Injector assembly for liquid fueled rocket engines Patent  
[NASA-CASE-XMF-00968] c28 N71-15660

Space capsule ejection assembly Patent  
[NASA-CASE-XMF-03169] c31 N71-15675

Air cushion lift pad Patent  
[NASA-CASE-MFS-14685] c31 N71-15689

Method of making a molded connector Patent  
[NASA-CASE-XMF-03498] c15 N71-15986

Regenerative braking system Patent  
[NASA-CASE-XMF-01096] c10 N71-16030

Condition and condition duration indicator Patent  
[NASA-CASE-XMF-01097] c10 N71-16058

Method and apparatus for securing to a spacecraft Patent  
[NASA-CASE-MFS-11133] c31 N71-16222

Method and apparatus of simulating zero gravity conditions Patent  
[NASA-CASE-MFS-12750] c27 N71-16223

Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c20 N71-16340

Serpentuator Patent  
[NASA-CASE-XMF-05344] c31 N71-16345

Gravimeter Patent  
[NASA-CASE-XMF-05844] c14 N71-17587

High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c14 N71-17588

Burst diaphragm flow initiator Patent  
[NASA-CASE-MFS-12915] c11 N71-17600

Vacuum deposition apparatus Patent  
[NASA-CASE-XMF-01667] c15 N71-17647

Quick disconnect latch and handle combination Patent  
[NASA-CASE-MFS-11132] c15 N71-17649

Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114] c15 N71-17650

Low temperature flexure fatigue cryostat Patent  
[NASA-CASE-XMF-02964] c14 N71-17659

Precision stepping drive Patent  
[NASA-CASE-MFS-14772] c15 N71-17692

Multi-mission module Patent  
[NASA-CASE-XMF-01543] c31 N71-17730

Ratchet mechanism Patent  
[NASA-CASE-MFS-12805] c15 N71-17805

Method of making impurity-type semiconductor electrical contacts Patent  
[NASA-CASE-XMF-01016] c26 N71-17818

Apparatus for the determination of the existence or non-existence of a bonding between two members Patent  
[NASA-CASE-MFS-13686] c15 N71-18132

Static inverters which sum a plurality of waves Patent  
[NASA-CASE-XMF-00663] c08 N71-18752

Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c11 N71-18773

Space manufacturing machine Patent  
[NASA-CASE-MFS-20410] c15 N71-19214

Extensometer Patent  
[NASA-CASE-XMF-04680] c15 N71-19489

Mechanical simulator of low gravity conditions Patent  
[NASA-CASE-MFS-10555] c11 N71-19494

Weld control system using thermocouple wire Patent  
[NASA-CASE-MFS-06074] c15 N71-20393

Evaporant source for vapor deposition Patent  
[NASA-CASE-XMF-06065] c15 N71-20395

Satellite despin device Patent  
[NASA-CASE-XMF-08523] c31 N71-20396

Method of coating circuit paths on printed circuit boards with solder Patent  
[NASA-CASE-XMF-01599] c09 N71-20705

Elastomeric silazane polymers and process for preparing the same Patent  
[NASA-CASE-XMF-04133] c06 N71-20717

Method of producing alternating ether siloxane copolymers Patent  
[NASA-CASE-XMF-02584] c06 N71-20905

Honeycomb panel and method of making same Patent  
[NASA-CASE-XMF-01402] c18 N71-21651

Portable milling tool Patent  
[NASA-CASE-XMF-03511] c15 N71-22799

Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c15 N71-22877

Continuous detonation reaction engine Patent  
[NASA-CASE-XMF-06926] c28 N71-22983

Adaptive tracking notch filter system Patent  
[NASA-CASE-XMF-01892] c10 N71-22986

Meteorological balloon Patent  
[NASA-CASE-XMF-04163] c02 N71-23007

Continuous turning slip ring assembly Patent  
[NASA-CASE-XMF-01049] c15 N71-23049

Automatic welding speed controller Patent  
[NASA-CASE-XMF-01730] c15 N71-23050

Positive dc to positive dc converter Patent  
[NASA-CASE-XMF-14301] c09 N71-23188

Zero gravity apparatus Patent  
[NASA-CASE-XMF-06515] c14 N71-23227

Positive dc to negative dc converter Patent  
[NASA-CASE-XMF-08217] c03 N71-23239

Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c15 N71-23256

Azimuth laying system Patent  
[NASA-CASE-XMF-01669] c21 N71-23289

Electron beam instrument for measuring electric fields Patent  
[NASA-CASE-XMF-10289] c14 N71-23699

Anemometer with braking mechanism Patent  
[NASA-CASE-XMF-05224] c14 N71-23726

Apparatus for testing a pressure responsive instrument Patent  
[NASA-CASE-XMF-04134] c14 N71-23755

Electric welding torch Patent  
[NASA-CASE-XMF-02330] c15 N71-23798

Swivel support for gas bearings Patent  
[NASA-CASE-XMF-07808] c15 N71-23812

Welding skate with computerized control Patent  
[NASA-CASE-XMF-07069] c15 N71-23815

Docking structure for spacecraft Patent  
[NASA-CASE-XMF-05941] c31 N71-23912

High pressure helium purifier Patent  
[NASA-CASE-XMF-06888] c15 N71-24044

Horizontal cryostat for fatigue testing Patent  
[NASA-CASE-XMF-10968] c14 N71-24234

Method for leakage testing of tanks Patent  
[NASA-CASE-XMF-02392] c32 N71-24285

Internal flare angle gauge Patent  
[NASA-CASE-XMF-04415] c14 N71-24693

Pulse rise time and amplitude detector Patent  
[NASA-CASE-XMF-08804] c09 N71-24717

System for maintaining a motor at a predetermined speed utilizing digital feedback means Patent  
[NASA-CASE-XMF-06892] c09 N71-24805

Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114-2] c09 N71-24807

Magnetomotive metal working device Patent  
[NASA-CASE-XMF-03793] c15 N71-24833

Apparatus for determining the deflection of an electron beam impinging on a target Patent  
[NASA-CASE-XMF-06617] c09 N71-24843

- Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMP-05195] c10 N71-24861
- RC rate generator for slow speed measurement Patent  
[NASA-CASE-XMP-02966] c10 N71-24863
- Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMP-05114-3] c15 N71-24865
- Duct coupling for single-handed operation Patent  
[NASA-CASE-MPS-20395] c15 N71-24903
- Brushless direct current tachometer Patent  
[NASA-CASE-MPS-20385] c09 N71-24904
- Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MPS-14971] c15 N71-24984
- Pulse width inverter Patent  
[NASA-CASE-MPS-10068] c10 N71-25139
- Isothermal cover with thermal reservoirs Patent  
[NASA-CASE-MPS-20355] c33 N71-25353
- Storage container for electronic devices Patent  
[NASA-CASE-MPS-20075] c09 N71-26133
- Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMP-05114-2] c15 N71-26148
- Filter system for control of outgas contamination in vacuum Patent  
[NASA-CASE-MPS-14711] c15 N71-26185
- Image magnification adapter for cameras Patent  
[NASA-CASE-XMP-03844-1] c14 N71-26474
- Thickness measuring and injection device Patent  
[NASA-CASE-MPS-20261] c14 N71-27005
- Personal propulsion unit Patent  
[NASA-CASE-MPS-20130] c28 N71-27585
- Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MPS-14114] c33 N71-27862
- Method of making shielded flat cable Patent  
[NASA-CASE-MPS-13687] c09 N71-28691
- Ac motor speed control system Patent  
[NASA-CASE-MPS-14610] c09 N71-28886
- Cryogenic thermal insulation Patent  
[NASA-CASE-XMP-05046] c33 N71-28892
- Method of coating through-holes Patent  
[NASA-CASE-XMP-05999] c15 N71-29032
- Response analyzers for sensors Patent  
[NASA-CASE-MPS-11204] c14 N71-29134
- Current regulating voltage divider  
[NASA-CASE-MPS-20935] c09 N71-34212
- Nuclear mass flowmeter  
[NASA-CASE-MPS-20485] c14 N72-11365
- Fine adjustment mount  
[NASA-CASE-MPS-20249] c15 N72-11386
- Method of making foamed materials in zero gravity  
[NASA-CASE-XMP-09902] c15 N72-11387
- Air bearing assembly for curved surfaces  
[NASA-CASE-MPS-20423] c15 N72-11388
- Stud-bonding gun  
[NASA-CASE-MPS-20299] c15 N72-11392
- Apparatus for obtaining isotropic irradiation of a specimen  
[NASA-CASE-MPS-20095] c24 N72-11595
- Wind tunnel test section  
[NASA-CASE-MPS-20509] c11 N72-17183
- Multiple image storing system for high speed projectile holography  
[NASA-CASE-MPS-20596] c14 N72-17324
- Method of manufacturing semiconductor devices using refractory dielectrics  
[NASA-CASE-XER-08476-1] c26 N72-17820
- Underwater space suit pressure control regulator  
[NASA-CASE-MPS-20332] c05 N72-20097
- Apparatus for making diamonds  
[NASA-CASE-MPS-20698] c15 N72-20446
- An airlock  
[NASA-CASE-MPS-20922] c31 N72-20840
- Photoetching of metal-oxide layers  
[NASA-CASE-ERC-10108] c06 N72-21094
- Liquid aerosol dispenser  
[NASA-CASE-MPS-20829] c12 N72-21310
- Optical probing of supersonic flows with statistical correlation  
[NASA-CASE-MPS-20642] c14 N72-21407
- Mechanically actuated triggered hand  
[NASA-CASE-MPS-20413] c15 N72-21463
- Hermetically sealed elbow actuator  
[NASA-CASE-MPS-14710] c09 N72-22195
- Shielded flat cable  
[NASA-CASE-MPS-13687-2] c09 N72-22198
- Shock wave convergence apparatus  
[NASA-CASE-MPS-20890] c14 N72-22439
- Bonding of reinforced Teflon to metals  
[NASA-CASE-MPS-20482] c15 N72-22492
- Inorganic thermal control coatings  
[NASA-CASE-MPS-20011] c18 N72-22566
- High temperature furnace for melting materials in space  
[NASA-CASE-MPS-20710] c11 N72-23215
- Siloxane containing epoxide compounds  
[NASA-CASE-MPS-13994-2] c06 N72-25148
- Silphenylenesiloxane polymers having in-chain perfluoroalkyl groups  
[NASA-CASE-MPS-20979] c06 N72-25151
- Emergency lunar communications system  
[NASA-CASE-MPS-21042] c07 N72-25171
- Lead attachment to high temperature devices  
[NASA-CASE-ERC-10224] c09 N72-25261
- Device for measuring bearing preload  
[NASA-CASE-MPS-20434] c11 N72-25288
- Multiple in-line docking capability for rotating space stations  
[NASA-CASE-MPS-20855-1] c31 N72-25853
- Altitude simulation chamber for rocket engine testing  
[NASA-CASE-MPS-20620] c11 N72-27262
- Fixture for supporting articles during vibration tests  
[NASA-CASE-MPS-20523] c14 N72-27412
- Electrical connector  
[NASA-CASE-MPS-20757] c09 N72-28225
- Remote control manipulator for zero gravity environment  
[NASA-CASE-MPS-14405] c15 N72-28495
- Thermal compensating structural member  
[NASA-CASE-MPS-20433] c15 N72-28496
- Semiconductor transducer device  
[NASA-CASE-ERC-10087-2] c14 N72-31446
- Coaxial high density, hypervelocity plasma generator and accelerator with ionizable metal disc  
[NASA-CASE-MPS-20589] c25 N72-32688
- Process for the preparation of brushite crystals  
[NASA-CASE-ERC-10338] c04 N72-33072
- Adjustable force probe  
[NASA-CASE-MPS-20760] c14 N72-33377
- Polyimide resin-fiberglass cloth laminates for printed circuit boards  
[NASA-CASE-MPS-20408] c18 N73-12604
- Differential pressure control  
[NASA-CASE-MPS-14216] c14 N73-13418
- Redundant hydraulic control system for actuators  
[NASA-CASE-MPS-20944] c15 N73-13466
- Device and method for determining X ray reflection efficiency of optical surfaces  
[NASA-CASE-MPS-20243] c23 N73-13662
- Process for making diamonds  
[NASA-CASE-MPS-20698-2] c15 N73-19457
- Test stand system for vacuum chambers  
[NASA-CASE-MPS-21362] c11 N73-20267
- Material fatigue testing system  
[NASA-CASE-MPS-20673] c14 N73-20476
- Ratemeter  
[NASA-CASE-MPS-20418] c14 N73-24473
- Underwater space suit pressure control regulator  
[NASA-CASE-MPS-20332-2] c05 N73-25125
- Anemometers (peak wind speed anemometers)  
[NASA-CASE-MPS-20916] c14 N73-25460
- Monitoring deposition of films  
[NASA-CASE-MPS-20675] c26 N73-26751
- Docking structure for spacecraft  
[NASA-CASE-MPS-20863] c31 N73-26876
- Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c09 N73-27150
- Restraint system for ergometer  
[NASA-CASE-MPS-21046-1] c14 N73-27377
- Apparatus and method for skin packaging articles  
[NASA-CASE-MPS-20855] c15 N73-27405
- Ergometer  
[NASA-CASE-MPS-21109-1] c05 N73-27941
- Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MPS-21010-1] c05 N73-30078
- Measurement system  
[NASA-CASE-MPS-20658-1] c14 N73-30386
- Collimator of multiple plates with axially aligned identical random arrays of apertures  
[NASA-CASE-MPS-20546-2] c14 N73-30389

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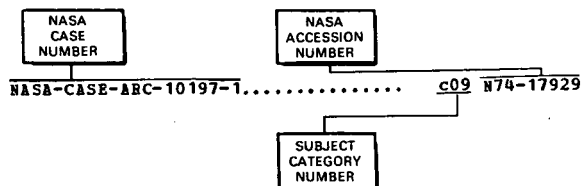
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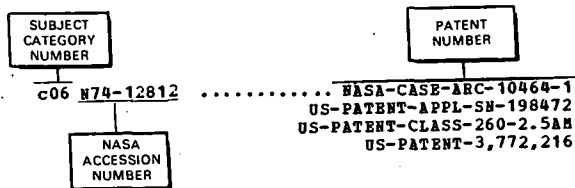
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